

THE AUTOMOBILE

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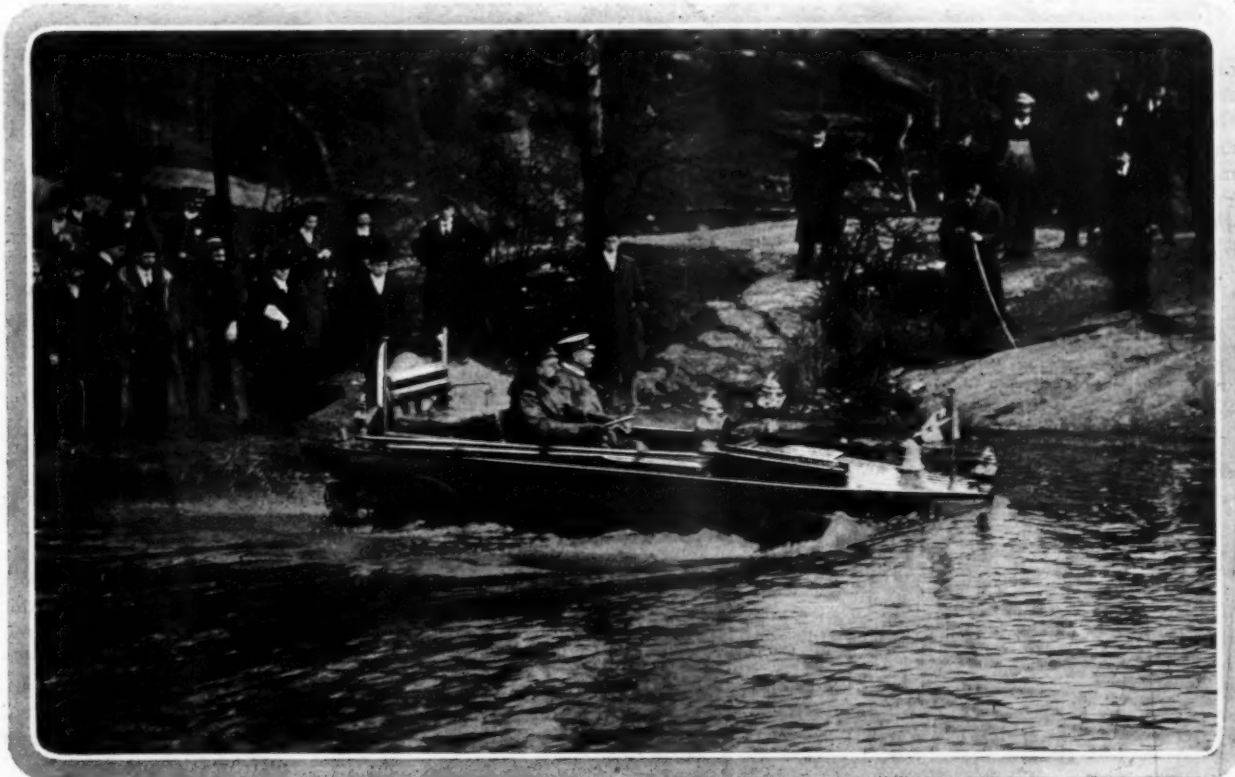
ON LAND AND WATER WITH CANOT-VOITURE

THREE hoots from a passing tugboat greeted the appearance of the *Waterland* in the calm waters of the Hudson last Tuesday afternoon. Whether they were notes of defiance or a shrill cry of welcome is impossible for a landsman to say, but certainly the recipient was worthy of an official welcome, and the skipper of the tug had his weather-eye open when from mid-stream he discovered in the small craft on the edge of the water something more important than usual.

The launching of the *Waterland* really took place on Broadway, opposite the Oldsmobile store, where for an hour a crowd

A Frenchman from Paris, M. Ravillier, conceived the idea of an automobile which would be equally at home on water as on land. He constructed his *canot-voiture*—one is at a loss whether to call it a craft or a machine—succeeded in interesting the army and the navy, and in selling the foreign patents to George E. Crater, who promptly shipped the boat, inventor, and the entire crew of one man to New York for demonstration purposes.

Externally the production has all the appearances of a motor-boat deprived of its screw and mounted on steel wheels. A front axle lodges in a space provided for it in the fore-end of



FIRST PLUNGE INTO AMERICAN WATERS OF THE FRENCH AMPHIBIOUS AUTO "WATERLAND," INVENTOR AND PILOT ON BOARD.

of sightseers had gathered around the boat on wheels, and had exhausted all its imaginative powers in an effort to discover its object in life. When the small boy hanging on the rear had been cuffed until he was glad to fall off, the blue-painted *Waterland* swung her bow round and scurried up Broadway, followed by a string of official cars and as many chauffeurs as happened to be passing and had half an hour to spare. Arriving at Fort Washington Park, the land and water production wormed her way down to the water's edge, halted an instant until her propeller case had been removed, then plunged into the stream under her own power, and bobbed in acknowledgment of the tug's salute.

the boat, and suspension is provided by a couple of semi-elliptic springs attached to brackets from the side of the craft. In the same way the rear wheels are suspended, drive being by means of side chains from a countershaft projecting through each quarter to a sprocket on each rear wheel.

Within the boat is a two-cylinder De Dion motor developing about 15 horsepower, which will drive the screw in regulation fashion, or will communicate power to the road wheels merely by a change of gear through a side lever. Shifting from either land or water drive is performed in the same way as an automobilist drops from fourth to third speed. Steering is by the ordi-



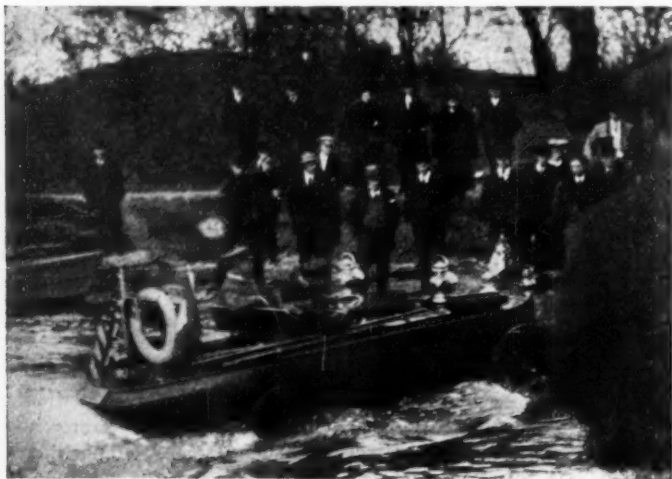
READY FOR THE RUN FROM BROADWAY TO THE RIVER.

nary method of an inclined column surmounted by a wheel, with the addition that the front wheels and the rudder are operated simultaneously whether on land or water.

Pressed steel is employed for the hull, this type of construction having been adopted, according to the inventor, to fit the boat for military service. In the French government tests the craft was made into a target with results visible to anyone caring to examine the paint work. With three passengers on board *Waterland* had but a small amount of freeboard, and although assurance was given that she could not capsize, none of the passengers asked for a demonstration or cared to inquire as to what would happen if a wave came aboard.

A dozen times in succession the boat came back to land, came completely out of the water under its own power, took a fresh consignment of passengers, then backed into stream again. The arrangement of the gears allowed either the road wheels and propeller to be used together or independently; thus, although the ground was so soft that the solid tired wheels sank almost immediately, the craft was able to come in and out without any external aid, notwithstanding the soft ground.

When everybody had been given an opportunity of testing the nautical ability of the *Waterland*, her Gallic crew ran her completely ashore and the spectators stood round in anticipation of a hill-climbing contest through unmacadamized Fort Washington Park. Instead of speeding up the engine, though, the crew took off the forward hatch and fitted a small capstan on the fore-castle. A tow rope was flung overboard, one end attached to a tree, the other wrapped round the capstan in nautical manner, and the De Dion's two cylinders induced to develop power. From a pulley on the forward end of the crankshaft a belt communicated with a countershaft, transmitting movement to the



COMING ASHORE—NO OUTSIDE HELP NEEDED.

capstan through bevel gears. A loose and a fixed pulley, and an ordinary belt shifter allowed the capstan to be either operated or remain idle. With this arrangement the steep, rough hill was climbed with very little difficulty, and as soon as the worst portions had been surmounted the rope was rolled up, the capstan dismounted and a non-stop homeward run made under the critical gaze of Broadway's bicycle policemen and automobile experts at a speed of twelve miles an hour.

Arrangements for the demonstration were made by the Oldsmobile Company of New York, details being in the hands of George E. Crater, the holder of the American and English patents. It is announced that steps are to be taken to build the *canot-voiture* in America and to place it on sale here. The *Waterland* will form one of the attractions at the motor boat shows at New York, Boston and Chicago.

PRESIDENT OPENS TENTH PARIS SHOW.

PARIS, Nov. 12.—President Fallieres formally opened the tenth annual automobile show in the Grand Palais and the huge temporary building on the Esplanade des Invalides this morning. Owing to it being the decennial exposition, the A. C. F. has decided on a more brilliant spectacular display than ever before, and will keep the exhibition open three weeks instead of two as formerly. Practically all the streets and squares within a three-quarter-mile radius have been included in a brilliant electric display, easily surpassing the outside illuminations of last year.

Within the main hall the electric decorations are of a particularly artistic and ingenious nature, the big glass dome being set with blue and gold lamps to give the effect of illuminated lace work. For the most part stands are those of last year with a few embellishments, illuminated wrought iron work predominating. De Dion is one of the few making an entire change with a Chinese pagoda in commemoration of the journey from Peking to Paris by one of their cars.

An attraction of the show is the "stand of honor" on which are displayed Nazzaro's Fiat, winner of the Grand Prix; the Peugeot which won the Coupe de la Presse, a Darracq racer, and a De Dion which traveled from Peking to Paris.

Prominent among the changes are shaft-driven cars for Dietrich and Panhard, high-tension magneto for Mercedes, a new gear box for the Renault, and several gasoline-electric tow vehicles, one of the most important being a machine designed by Girardot, formerly of the C. G. V. firm.

Commercial vehicles of all kinds, motor boats, and machine tools and stationary plants in motion occupy a space on the Esplanade des Invalides equal to the entire Grand Palais. All the prominent American makers of machine tools show their products in motion. The commercial side of automobiling appears to have been enormously developed. Pleasure vehicles of moderate power are more to the fore than ever, while high-powered cars have in most cases undergone a slight reduction in price. For the first time cheap small-powered runabouts form a really interesting class from a business standpoint. During the show international conferences will be held on the use of alcohol, touring conditions, and motor boats. Arrangements have been made with all railroad companies for cheap transportation of those connected with the industry from the provinces to Paris.

American Firms in the British Show.

LONDON, Nov. 11.—Without any very imposing ceremony, the sixth annual British motor exhibition, organized by the Royal Automobile Club and the Society of Motor Manufacturers and Traders, was thrown open to the public to-day and will continue until November 23. Although clashing with the Paris exhibition, there is no diminishing of interest in the British event, the big Olympia hall receiving a record attendance on the opening day. About six hundred pleasure vehicles are on show from every British firm and all the most important houses of France, Germany, Belgium and Italy. America is represented by Ford, Winston, White, Buick, and Reo.

TINY RUNABOUTS SHOW RECORD SPEED

PARIS, Nov. 5.—Over forty miles an hour for a distance of nearly two hundred miles, by the aid of a tiny cylinder measuring 3.9 by 4.7 bore and stroke, is such a remarkable performance that it is not surprising our French friends find even their extensive stock of adjectives altogether too meager.

quately protect the course, \$2,800 having been spent by the organizers in obtaining the daily services of 800 troopers and a contingent of gendarmes and in barricading every part of the 21-mile course likely to be invaded by spectators.

Although the Sizaire & Naudin was an almost certain winner,

interest in the race was keen throughout, the cars all being speedy and the men excellent drivers, most of them having earned a reputation on racing motorcycles. The dangerous would-be-racing element had been eliminated during the six preliminary days. Sizaire, on the little machine produced at his own factory, set a fast pace with an initial round at a speed of over forty miles an hour. Giupone, on a Lion-Peugeot, was only three minutes behind, with Rigal, on a two-cylinder Werner, Naudin on another Sizaire & Naudin, Cissac on an Alcyon, and half a dozen others finishing within five minutes of the leader.

Sizaire maintained his lead on the second round, with his partner, Naudin, five minutes behind him, and Peugeot, Werner and Alcyon all finished at intervals of a few seconds. When six of the nine rounds had been run off, Rigal and his Werner

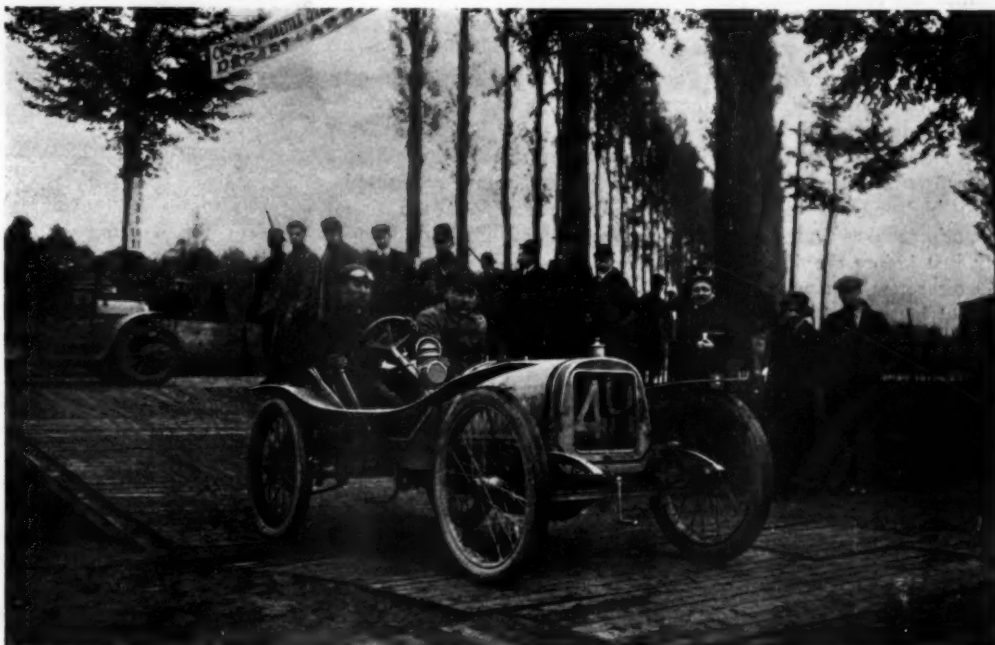
got into first place, Sizaire, the favorite, being held up twenty minutes with a burst tire and a broken valve. Rigal, the ex-Darracq man, was not to remain at the head long, for Naudin captured the lead at the end of another round, and as soon as Sizaire had made his repairs he came to the attack with redoubled fury, doing the last three rounds at an average of forty-nine



NAUDIN, ON SIZAIRE & NAUDIN, WINNER OF VOITURETTE RACE.

The occasion was the final of the Coupe des Voiturettes, which started with 63 little runabouts on a 21-mile circuit near Rambouillet. After a six-day grind of 147 miles a day, at an average speed of not less than 18.6 miles an hour, 41 remained for the seventh day's speed test of 189 miles over the same circuit. The only result of the six days' preliminary running had been to eliminate a dozen machines which would have fallen out in half an hour of speed work, and to prove that any decently constructed machine, even if it has but one cylinder, can turn indefinitely at an average of eighteen miles an hour. True it had given the drivers an opportunity of studying every inch of the course, thus making possible a little faster speed than would have been attained otherwise; but its practical result was so slight that next year's "tour" will probably be a race only.

At intervals of thirty seconds the forty-one were sent away in the presence of not less than ten thousand spectators brought in from Paris by train or on the 783 automobiles which, according to the gendarme officer in charge, formed a line four kilometers in length. Money had not been spared to ade-



LION-PEUGEOT, FIRST FOR TEAM REGULARITY, THIRD FOR SPEED.

miles an hour, his driving calling forth unanimous praise.

There were some exciting scenes on the sharp turn known as the Fourche, for with forty-one machines on a twenty-one-mile course it was impossible for them to be far apart at any time. Two or three missed the turn and had to drop out of the day's race with either a broken wheel or a bent axle. Giuppone furnished a few seconds of intense excitement when his single-cylinder Lion-Peugeot swung completely round on the bend and entered into the fence. In a second the ex-motorcyclist had dropped in his reverse, swung round again and had avoided the end-on collision which seemed certain for a moment. Mechanical defects developed during the race were slight—three cases of defective ignition, two cars with broken valves, one with a broken gasoline tank, and one with a defective axle.

Sizaire finished first, but as he had been one of the earlier starters he had to drop behind his team-mate Naudin by a fraction over two minutes, the winner covering the nine rounds, or 189 miles, in 4:38:52, being an average of 40.6 miles an hour. Goux, on a single-cylinder Lion-Peugeot, finished third, one minute behind the second. Cissac, on an Alcyon, took fourth place, the Rigal, with one of the two-cylinder Werners, unfairly handicapped on weight, took fourth place. Although finishing first and second, Sizaire & Naudin did not win the regularity prize, the total time of their three cars being eleven minutes slower than the total elapsed time of the Lion-Peugeot team. So close was the competition, however, that had classification been arranged on the usual point basis Sizaire & Naudin, finishing 1, 2 and 13, would have got it with 16 points, compared with 18 for Lion-Peugeot, finishing third, sixth and ninth. No international race for big cars was ever so keenly contested as this speed test for machines which would have been considered toys two years ago. The first Lion-Peugeot had a regularity record equal to that of Nazzaro in the Grand Prix, the average difference between his rounds being less than a minute, and the difference between his initial round with a standing start and his fastest being four minutes. Of the 41 starters 32 finished the race, six firms having complete teams at the end of the seventh day.

So much surprise has been caused, even in technical circles, at the amount of power and speed obtainable from a diminutive cylinder that rumors of doping have gone abroad. The machines are certainly stock so far as their essential features are concerned, and there is no reason to believe that the gasoline received any additions. To put the matter completely at rest, however, the technical committee of the A. C. F. took a sample of the gasoline from the leading cars and after analysis will announce the result. Last year the maximum bore was limited to 4.7 inches; when the A. C. F. decided that a voiturette must not exceed 3.9 inches for a single cylinder, Sizaire & Naudin protested. They built a new car, and, although nearly an inch had been clipped off their bore, increased their average speed from 36 miles an hour to over 40.

A feature of the winning machines, all of which are selling from \$500 to \$800, is that over 90 per cent. of them were fitted with high-tension magneto. Simms-Bosch equipped the first six, other makes represented being Eiseman and Nilmeliior. Coming just before the Paris salon, there is now an enormous boom in voiturettes, and under efficient management a record business should be created in popular runabouts.

MONUMENT FOR WINNER OF FIRST AUTO RACE.

Twelve years after the Paris-Bordeaux and return race, and ten years after his death, Paris has decided to erect a monument to the memory of Emile Levassor, winner of the first automobile race the world ever saw. The site chosen is almost the exact spot on which Levassor stopped his car on the termination of the run from Bordeaux in the two-cylinder machine that asked for water every thirty miles, but which succeeded in proving to the world that there were some powers of movement in the automobile. Enthusiasts were few at that time, even Panhard, the partner of Levassor, having little faith in the new road vehicle they had produced.

Eight years ago an effort was made to erect a monument to the memory of Levassor, but the response was feeble; recently a renewed effort was made and subscriptions came in a flood,



MONUMENT TO LEVASSOR AT PORTE MAILLOT, PARIS.

notables in the automobile world and workers in the Panhard-Levassor factory contributing with eagerness. The monument, which will be inaugurated during the Salon, represents Levassor arriving at Paris at the end of the first automobile race, the winning car bearing No. 5 on its radiator.

ENTRIES PLENTIFUL FOR 600-MILE RELIABILITY RUN

CHICAGO, Nov. 11.—Charles P. Root, chairman of the contest committee of the Chicago Motor Club, returned this morning from New York, bringing with him definite promises of at least eleven more entries for the 600-mile reliability run of the Motor Club the latter part of this month. With these eleven and the fourteen already in hand, the entry list, tentatively speaking, foots up to twenty-five cars, while there are assurances enough to make it seem more than probable that there will be

fifty in when the entries finally close on Thursday, November 21.

Those brought back by Chairman Root were from the Peerless, Autocar, White, Stevens-Duryea, Knox, Lozier and Locomobile. In some instances there are two and three cars promised, particularly in the case of the White Company, who are so intensely interested they are taking three cars. Two Locomobiles are on the fire and maybe two Stevens. The Knox talk two and the Lozier are debating the proposition.

PHILADELPHIA SHOW SUCCESSFULLY IN PROGRESS

PHILADELPHIA, Nov. 12.—The seventh annual show of the Philadelphia Automobile Trades' Association, in the First Regiment Armory, was opened at 8 o'clock Saturday evening without any formal fuss and feathers. The attendance was a remarkably large one in view of the fact that Secretary Beck dealt out "paper" with a none too liberal hand. But the conditions are getting to be such that the practice of passing out "slows" to every Thomas, Richard, and Henry who may think he is entitled to them had to be cut out. People with real money in their hands nowadays clamor for a chance to purchase their way into the show, and with a building remarkable only for its utter inadequacy in size, it goes without saying that the show committee knew their business.

The advance in the show date from the snowball season to that of the harvest probably inspired the autumnal foliage idea in the decorative scheme, and that those in charge of that branch of the work made no mistake was evident from the exclamation of pleasure which accompanied the visitors' first view of the show from the entrance. To carry out the outdoor effect still further, all the booths are carpeted alike with grass-green burlap, while similar material of a gravel color represents the paths leading through the expanse of tree-dotted lawn. Overhead and around the side walls are draped thousands of yards of yellow and white bunting, and at night the usual lighting facilities of the armory are helped out by scores of universal lights ensconced in huge inverted flowers of a color to harmonize with the reds, yellows, and browns of the color scheme. There are no signs in evidence in the main hall, except the golden banners hanging from the roof or walls, and on which are the names of the cars in crimson lettering.

While Saturday night saw the exhibits still incomplete by reason of the fact that cars from the Garden show had not yet arrived, Monday midday saw all the exhibits in place.

Anyone who has ever endeavored to get a quart foot into a pint shoe will realize what the show committee was up against when it came to dividing up the space at its disposal among the exhibitors. This year the spaces were not assigned until all the applications had been filed, and none of the applicants was allowed more than two of the rather small spaces. True, the members of the association were given the preference when the locations were considered, but otherwise all hands were on an equal footing. And the fact that few complaints were heard is evidence that the committee has acted fairly with all. Some few of the accessories exhibitors claim to be unable to give an adequate display of their wares in the limited gallery spaces, and are holding individual shows at their respective salesrooms, all within a few minutes' walk of the armory. Other local dealers who delayed their applications until too late are doing likewise.

There are 58 exhibitors packed into the armory—32 showing 45 different makes of cars and 26 exhibiting accessories of various kinds, eleven of the latter being made up of tire displays. Two makes of motorcycles are exhibited. Of the 32 exhibits of complete cars and chassis in the drill hall, the majority are necessarily cramped owing to the desire of the exhibitors to show their respective lines as fully as possible. There are 110 complete cars and 22 chassis in the armory. Under the circumstances this is a most creditable showing.

To insure plenty of inspection room for those who contemplate buying, the committee has followed in the footsteps of the Garden show managers, announced Tuesday and Thursday as dollar admission days. The necessity for such an innovation was demonstrated at the last show, when the crowds were so thick as to seriously interfere with business.

To point out any exhibit as pre-eminent in a show where every effort is made to put all of them on an equal footing is, of course, impossible, but it is, nevertheless, a fact that the local crowds gather thickest where the "long, low, piratical craft" of

the roads are in evidence—those rakish runabouts and tourabouts which, while resembling racing cars in outward appearance, are equally as comfortable as the larger and more luxurious looking touring cars.

Among those concerns which either failed to apply for space in time or which preferred to run shows at their near-by salesrooms rather than attempt to do justice to their cars in cramped quarters are: A. G. Spalding & Bros., Stevens-Duryea, directly opposite the armory; Berl Segal, the newly-appointed Imperial agent, also opposite the armory; Panhard and Simplex, in the lobby of the Bellevue-Stratford Hotel; Studebaker, "on the street," having recently broken with their local agents; the Philadelphia Motor Car Company Frayer-Miller, at 236 North Broad street; Harry S. Houtt Company, 139 South Broad street; Dragon, 143 South Broad street. All of these concerns will make their salesrooms specially attractive to visitors during show week with music, flowers, and the "trimmin's."

This is the complete list of concerns exhibiting:

AUTOMOBILES (Main Floor).

ACME: John L. Scull.	MERCEDES: West - Stillman Motor Car Co.
AMERICAN: International Motor Car Co.	MITCHELL: Pennsylvania Motor Car Co.
AMERICAN MORS: Girard Motor Car Co.	NATIONAL: Tloga Automobile Co.
APPERSON: Philadelphia Automobile Co.	OLDSMOBILE: The Motor Shop Inc.
AUTOCAR: Autocar Co.	OVERLAND: International Motor Car Co.
AUTOCAR: General Motor Car Co.	PACKARD: Keystone Motor Car Co.
BAKER: Foss-Hughes Motor Car Co.	PEERLESS: Quaker City Automobile Co.
BUICK: Keystone Motor Car Co.	PENNSYLVANIA: Penna. Auto Motor Co.
CADILLAC: Foss-Hughes Motor Car Co.	PIERCE-ARROW: Foss-Hughes Motor Car Co.
CARTERCAR: Carter Motor Car Corp.	POPE-HARTFORD: Titman-Leeds & Co.
CLEVELAND: Girard Motor Car Co.	PREMIER: Reo Motor Car Co.
COLUMBIA: Prescott Adamson.	PULLMAN: L. E. French.
CRAWFORD: T. M. Twining.	RAMBLER: Thos. B. Jeffery & Co.
ELMORE: Gawthrop & Wister.	REO: Reo Motor Car Co.
FORD: Ford Motor Co.	ROYAL TOURIST: Hills Motor Car Co.
FRANKLIN: Quaker City Auto Co.	STEARNS: The Motor Shop, Inc.
JACKSON: Spencer Motor Car Co.	STODDARD-DAYTON: Hamilton Auto Co.
LOCOMOBILE: Locomobile Co. of America.	WALTER: International Motor Car Co.
LOZIER: General Motor Car Co.	WAVERLEY: West - Stillman Motor Car Co.
MARION: International Motor Car Co.	WAYNE: Rittenhouse Garage.
MARMON: Brazier Automobile Works.	WHITE: The White Co.
MATHESON: Titman-Leeds & Co.	WINTON: Winton Motor Carriage Co.
MAXWELL: Kelsey Motor Car Co.	

TIRES (Second Floor).

Diamond Rubber Co.	Home Tire Co.
Firestone Tire & Rubber Co.	Morgan & Wright.
Fisk Rubber Co.	Pennsylvania Rubber Co.
Gibney, James L. & Bros.	Sanford Co., Wm. (Sampson).
Goodrich Company, B. F.	Standard Rubber Tire Co. (Republic).
Goodyear Rubber Co.	

MISCELLANEOUS.

Auto Equipment Co.	Manufacturers' Supplies Co.
Autolight & Motor Supply Co.	Miller, Charles E.
Brown Auto Top Co.	Nock Co., George W.
Columbia Lubricants Co.	Phila. Auto Accessories Co.
Hans Co., Edmond E.	Puritan Soap Co.
Home Tire Co.	Richter Electric Co., Eugene L.
Indian Motorcycle Agency.	Rose Manufacturing Co.
Kellom & Co., Charles F.	Snyder, M. L.

REFINEMENTS OF THE AMERICAN AUTOMOBILE

By W. F. BRADLEY.

AS the mechanical features of the automobile attain higher and higher degrees of efficiency, more and more attention is being paid to refinements and finish. In the early days the automobilist asked for nothing more than a piece of machinery which would carry him over the roads at a faster rate than the



ELEGANCE AND PRACTICABILITY OF THE PIERCE LIMOUSINE.

horse; he willingly put up with obvious imperfections and was never exacting in the matter of body refinements.

To-day the automobilist must not only have a vehicle capable of carrying him from place to place without falter, but must be moved about with a host of refinements never dreamed of in connection with other modes of locomotion. An inspection of the models at the Madison Square show revealed the fact that not only is the public demand met, but manufacturers anticipate the desires of users, with improvements and refinements calculated to satisfy the most critical.

Instead of being satisfied with an open car all the year round, closed bodies are now deemed an absolute necessity by every user of an automobile with sufficient power to carry the extra weight. Limousine and landaulet bodies are more frequent than ever, some of the leading makers now producing as many closed as open bodies. Road conditions in this country are prejudicial to the extensive use of heavy closed bodies, with the result



OLD ENGLISH STAGE COACH ON APPERSON CHASSIS.

that the closed type is more or less of a city vehicle with few provisions for extensive touring.

An important exception is a closed touring car shown at the Pope-Toledo stand. It is a type of vehicle in frequent use over the better roads of Europe, but up to the present a complete stranger to America. The Pope-Toledo closed touring coach is a special limousine body mounted on the firm's standard four-cylinder 50-60-horsepower chassis. Ample protection is afforded the driver by a folding leather top and a swinging windshield with a leather apron attachment from its base to the top of the dashboard. Accommodation for luggage is provided by three special trunks on the top of the car, secured by straps to the metal gallery. On a rear platform two specially shaped trunks are carried; being inclosed in a black leather casing, they are completely protected from dust and rain and in no way mar the lines of the vehicle. It has not been forgotten that the exhaust from the engine can have a more evil effect on rear platform trunks than flying mud, for the fumes from the four cylinders of the Pope-Toledo are allowed to disperse nearly a couple of feet from the platform. Within the car two medium size dress suit cases can be carried under the front seats. They are prevented from shaking by being made to fit the space, are secured by a door, and the door hidden by the carriage trimmings, there being absolutely nothing to indicate their presence. With these seven trunks there is certainly ample luggage provision for an extensive tour by a full load of passengers.

The limousine is upholstered in gray broadcloth with whipcord trimmings, the upper portions of the walls and the ceiling being in polished white mahogany; the abolition of cloth is certainly an improvement, its presence not only harboring dust, but making an interior uncomfortably stuffy. The side windows let down, and the doors are fitted with wood screens provided with fine gauze panels to admit air. Among the refinements are electric lights, annunciator, and mirrors, which fold back against the wall, forming decorative panels when not in use. The external color scheme is pale yellow, black trimmings.

Luxurious Refinement.

Kimball, of Chicago, has a very original body mounted on an Apperson chassis. Opinion is likely to be divided on the effectiveness of its lines, but there will certainly be no two opinions regarding the excellent workmanship and careful finish of the old English stage coach. Side panels inclose the driver's seat, these panels being a continuance of the main body, with their base rounded off to harmonize with the rear of the body. Color scheme is black and red. At the rear of the body are a couple of lamps, showing a green and red light on the road and a white light inside. A projecting pocket between the two lamps is a reminiscence of more eventful days, when such a receptacle was needed to carry pistols and swords as a precaution against highway attacks. A tool box in the rear is of sufficiently ample dimensions to be useful, but not projecting more than four inches does not spoil the harmony of lines. Interior fittings are of the highest class, the refinements comprising speaking tube, electric lights, annunciator and convenient pockets.

As an example of luxuriousness and originality in internal fittings, the limousine on a 45-horsepower Pierce chassis stands



COIL UNDER DRIVER'S SEAT.

alone. In all structural features both chassis and body are of the standard type and are produced entirely at the Pierce factory. It is in the upholstery and fittings that special skill and labor have been exerted, H. M. Dawley, the Pierce Company's color designer, being specially responsible for the excellent result. All the upholstery below the line of the windows is carried out in a heavy buffalo hide ornamented by plain tooling. Above this line the trimming is hand-tooled Cordovan leather enriched with

dainty accents of colored lacquer and gold leaf. The same decorative scheme is worked out in the ceiling, also upholstered in leather, four lacquer and gold leaf bands radiating from a central electric dome. Harmonizing with the deep russet of the interior, all the interior metal is of an antique design and a sober gun-metal finish. Although an exceedingly dainty piece of work, the special Pierce limousine has the advantage of being thoroughly practical for constant use, leather being good wearing material and not a harbinger of dust. Judged from the standpoint of the user, the all-cloth style of upholstery is not the most satisfactory production.

Runabout bodies on powerful cars are to maintain their popularity, judging by the show exhibits. A general tendency is to

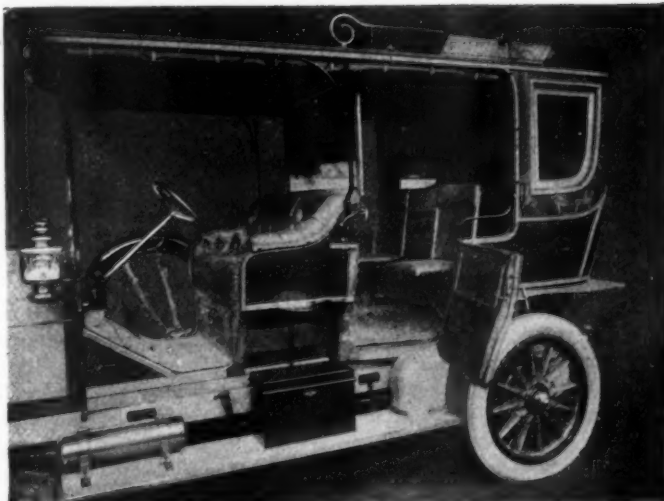
TIRE IRON HINGED TO FOLD AGAINST BODY.

put a double seat on the rear instead of the single rumble, this double seat being readily dismountable, leaving a large platform for luggage. Developing this idea still further, the Stearns people have produced a five-passenger runabout, in which the seat to the left of the driver is placed several inches rearwards, and the two rear seats are a small detachable tonneau, entered from the right-hand side of the car only. Seating accommodation is provided for the chauffeur by means of a detachable seat hung over the running board by brackets to the side frame and strengthened by one leg. To make the position of the user more secure, a foot rest is fitted to the forward end of the running board. The entire seat can be removed by merely slackening a couple of bolts, and the rear seats can be taken off almost as readily, transforming the five-seater into a two-passenger runabout.

There are some original features in a demi-limousine made by Barr and fitted to a Matheson chassis. Bodywork is finished in a light natural wood, and the interior is upholstered in pigskin. The roof and upper portions of the interior are finished in plaited straw work, the general appearance of the car being one of delightful coolness for summer touring. The side windows let down into pockets and the glass screen between the rear compartment and the front seats can be raised or lowered at will. External finish is in harmony with the interior, the mud guards, for instance, being covered with the same material as the interior upholstery.

Minor Improvements Are Visible Everywhere.

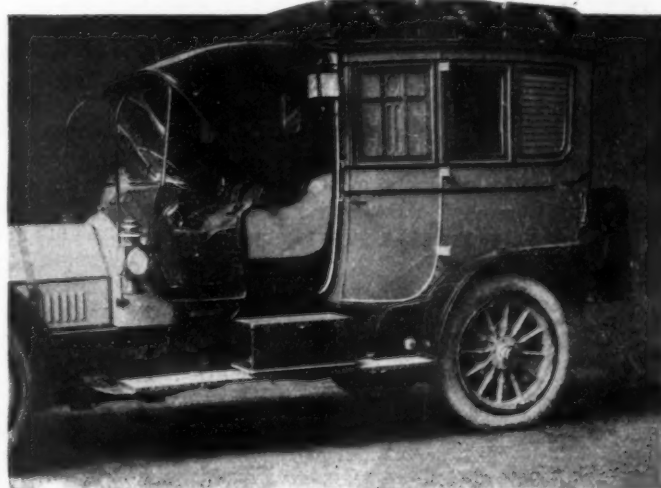
Apart from the special bodies, some of which are certainly more attractive under the glitter of the limelight than they would be after a few weeks on the road, there is a wealth of improvements and refinements in bodies and fittings calculated to interest the genuine tourist. There is a strong tendency towards soberness in both color schemes and fittings; not only are gaudily painted touring bodies the exception, but there is a commendable tendency towards less glitter in the metal fittings of the car. This is clearly exemplified in a Studebaker and in a Thomas landaulet finished to special order with headlights, lamps, tank, steering column and all other external metal work in gun metal.



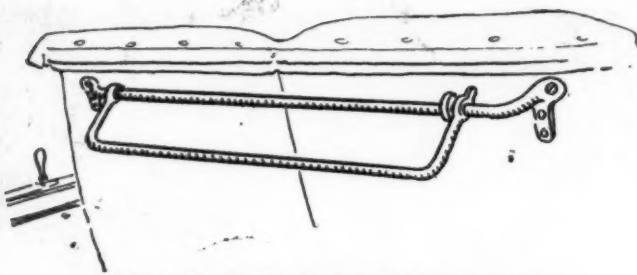
STRAW LINING, A FEATURE OF THE MATHESON.

Apart from the labor involved in keeping brasswork clean, its free use around the car has the effect of dazzling the driver to such an extent that some chauffeurs when driving in the face of the sun invariably smear dirt on their headlights. A large number of cars are shown with all metal work given a black finish, the result in nearly every case being pleasing. An excellent example is a Pope-Toledo touring car. On this machine, also, such metal work as door handles, robe rack, etc., has been covered with fine dark colored Morocco leather.

Provision has been made in a very large number of cases for more effectively keeping mud off the car, front mud guards being provided with a backing of either leather or metal, running to the side frame and completely protecting the bonnet. The use of a protector between running board and frame is a wise addition, for not only does it prevent mud being thrown upon the running board and the car, but it hides such unsightly organs as muffler, cables and transmission gear. On the better class closed vehicles, where its presence is almost a necessity, the guard is frequently in metal and not easily detachable. On touring cars leather fastened by means of buttons is the rule; on a certain proportion of the cars the attachment is made in such a rough and ready manner, and the brass buttons are so conspicuously brassy that cleanliness is only obtained at the expense of appearance. There are at least half a dozen cases, however, conspicuous among them being the Pope-Toledo, in which the leather apron is neatly cut and well fitted, the attachment being made by almost invisible buttons.

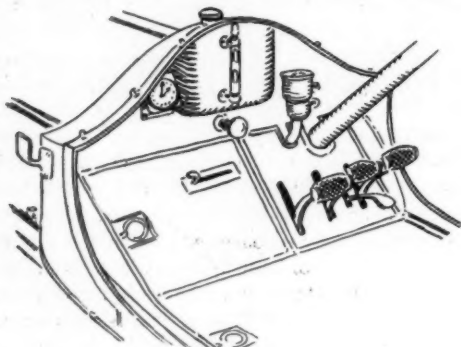


POPE-TOLEDO DESIGNED FOR COMFORTABLE TOURING.

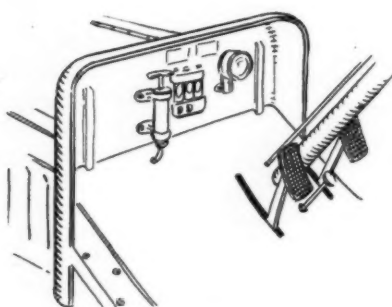


DOUBLE LEATHER-FACED HINGED RUG RACK.

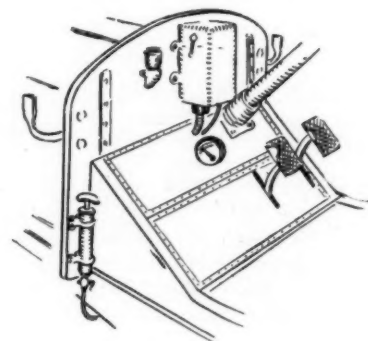
The trend towards simplicity and neatness is nowhere more pronounced than in the matter of dashboard arrangement. Fashion used to be to treat the driver to a display of automobile accessories. Studebaker, in one model, has gone to the other extreme, removing everything but a short circuit button, hardly visible a couple of feet away. Another model by the same firm has only a clock on the dashboard, surmounted by a small electric lamp reflecting onto the dial. Locomobile has a very neat dashboard arrangement, the only articles displayed being a small sight feed oiler, pump, and primer for carbureter—the whole group could be carried in the coat pocket. A similar clearing tendency is shown on the Lozier, the dashboard carrying the coil, a switch, and a small tubular oil indicator. Sunk



Pope-Toledo.



Locomobile.



Lozier.

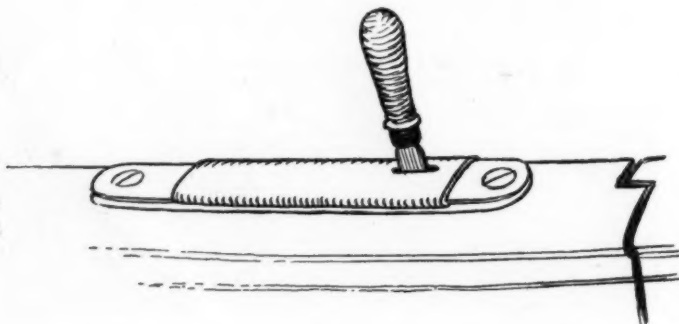
SIMPLIFICATION AND NEATNESS IN DASHBOARD ARRANGEMENT ON THREE LEADING CARS.

level with the sloping footboard is a pressure indicator. The pressure pump has been taken off the dashboard and placed in an equally accessible but less conspicuous position in the angle formed by the dash and the frame. A pleasing dash and foot-board arrangement is that of the Pope-Toledo, where the footboards instead of being of wood covered with rubber, are two steel plates with an aluminum finish. The forward plate is considerably sloped, leaving a very short dash, in the center of which is an auxiliary gasoline tank with sight feed and handle for shutting off supply at its base. The only other article on the dash proper is a speed indicator, though in the sloping foot-board there is a projecting level by which the flow of gasoline from the main tank is either shut off or opened. The coil is hung on the inside of one of the doors to the locker under the

inner arm of the iron loose on its sleeve, allowing it to be opened or closed to any desired width. A couple of broad brass bracelets fastened to the rear of a Lozier allowed for carrying a spare shoe there.

Small refinements for the comfort of travelers show more and more perfection. As an example of what is being done, the vertical knob by which the side doors of a touring car can be released generally necessitates a slit in the wood binder forming the top of the door. Rain enters and the spring mechanism becomes rusted. On two cars at least, a Studebaker and a Pope, this is avoided by a brass slide which automatically closes with the door, leaving no opening whatever. On the Stearns the two revolving armchairs are provided with a stop released by means of a convenient side lever. Instead of the cape top iron by the side of the forward seats being permanently fixed outboard, on the Lozier it is pivoted, folding inwards close to the upholstery; thus when not in use the iron is practically invisible. Another useful but minor improvement on the Lozier limousine is that the forward windows instead of letting down into pockets are made to slide one upon the other. A rack for rugs is a necessity in all touring cars, and forms a standard equipment. An improved design is attached to the Pope-Toledo car, consisting of two bars, both bound in leather, and made to hinge down when not in use.

Gasoline gauges on tanks are not very common as a standard equipment, only two cars in the show being fitted in this way. To protect against accidental puncturing of the rear gasoline tank, the Stearns runabout is equipped with a wood guard formed of laths laid on a metal frame and secured by a leather strap.



SLIDING COVER FOR LEVER OPERATING DOOR.

SIMULTANEOUS BRAKING OF ALL FOUR WHEELS*

By P. D'ESTIVAL.

FRONT-WHEEL braking has long been considered as offering a solution of the difficult problem of overcoming side-slip, particularly when the latter results from sudden stopping of the car as well as of better distributing tire wear. It is a subject of considerable general interest, that of retarding the car through brakes placed on the front wheels, as is evident from what has

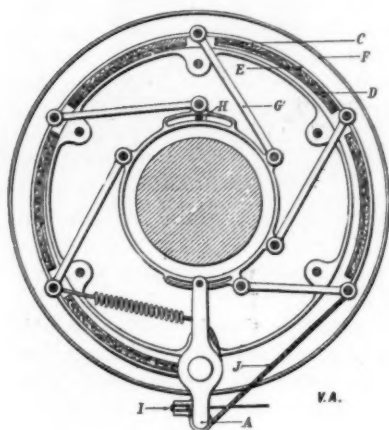


FIG. 1.—Hamon front wheel brake.

Hence, it seems logical, in order to obtain the best possible conditions of adherence, to retard the forward wheels, as they skid less than the rear wheels. However, there is considerable risk of blocking the front wheels and herein lies a serious danger, as in such a case they would no longer serve to direct the course of the car. Generally, the center of gravity is not sufficiently elevated to permit the overloading of the front axle, as a consequence of braking, to assume proportions greatly increasing the limit of adherence of the front wheels, which would be very dangerous, as the front wheels would then slide forward and the vehicle upset in attempting to turn about as a result.

It is evident from this brief exposition of the principles involved the sketch Fig. 2. A helical spring tends to maintain the brake substantially augmenting the negative acceleration, it may, on the other hand, be accompanied by dangerous consequences, particularly if the road surface be at all slippery, or if the car encounters an obstacle such as a (*dos d'ane*) "thank-you-ma'am." But the fact that the rear wheels carry the major part of the weight, something like 60 per cent. of the total, must be taken into consideration, and from this the conclusion is inevitable that the braking force on the front wheels must always be confined to a moderate value, not approaching a dangerous limit, and must also be applied at the same time as the rear brakes.

In the system devised by M. Hamon, he has allowed for imposing an amount of braking force to the wheels of each axle that shall be proportional to their static load. This is accomplished by means

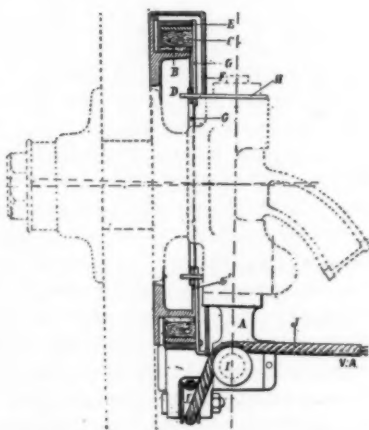
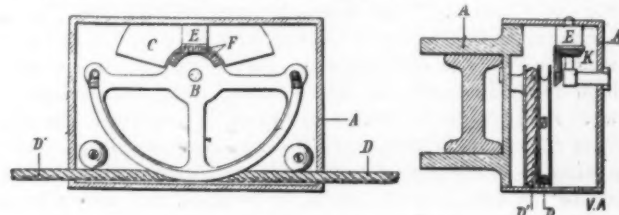
*Translation from *La Vie Automobile*, Paris, by Charles B. Hayward.

FIG. 2.—Constructional details, front wheel.

of a central control, operated either by pedal or by a hand lever in connection with a system of flexible cables actuating the brakes themselves, with the intervention, in the case of the forward pair, of an apparatus for automatically applying the front wheel brakes should the steering gear accidentally give way. As shown by



FIGS. 3 and 4.—Equalizing apparatus and automatic stop.

the illustrations, Figs. 1 and 2, the front wheel brakes consist of a friction drum *B* attached to the spokes of the wheel. The constricting band *E* is provided with a series of wooden blocks lined with camel's hair felt *D*. The latter are articulated by a series of levers *G*, all of which are attached to a circular retainer, this being permitted to oscillate concentrically with the wheel itself within the limits allowed by the sector *H*. The controlling cable *J* is attached to the last lever of the series *G* after passing through a guide and the pulley on the end of the fixed piece *A*, which is solid with and practically a continuation of the steering spindle of the wheel, this being shown particularly by the sketch Fig 2. A helical spring tends to maintain the brake

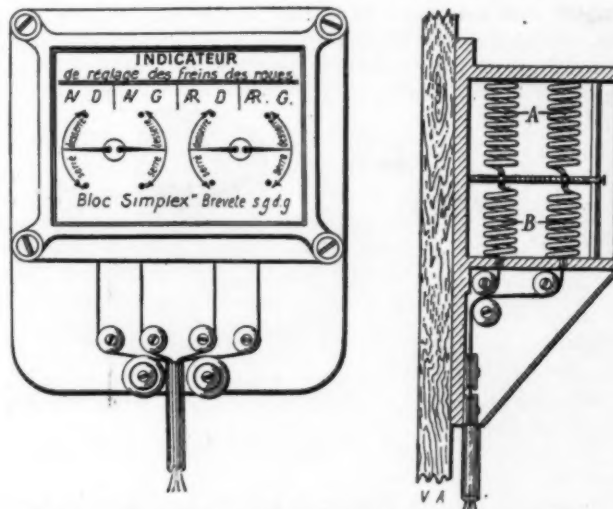


FIG. 5.—Details of dashboard indicator of Hamon four-wheel brake.

off the drum constantly, the whole device being well protected by the sheet iron housing *F*.

Putting a tension on the cable causes the circle *G* to oscillate to the right, carrying with it the levers, and the band is applied, commencing at the left, the wooden segments coming into contact progressively. Figs. 3 and 4 illustrate the connecting device which is attached to the center of the front axle, and which serves in case of an accident to the steering gear to automatically apply the front wheel brakes and at the same time releases the control lever of the rear wheel brakes. It will also come into action in case the chauffeur loses his head in trying to avoid an obstacle and throws the wheel over too quickly, which might result in colliding with a second obstruction. The details of the apparatus are outlined in the sketches, Figs. 3 and 4. *A* is the housing attached to the front axle, while *B* is the sector and *C* the stop; *D* is the brake-controlling cable, and *E* is the drum on which the cable attached to the hand lever is wound, while *F*

is the geared connection between the drum *E* and the sector *B*; *I* is the sheave over which the cable passes and *K* the shaft or axle of the drum *E*.

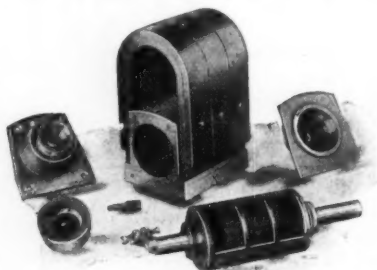
In order that the braking effort be not only efficient but entirely free from danger, it is necessary that the resistance created by each be identical in amount and simultaneously applied. In order to be able to know at any moment whether all the brakes of a car are in perfect working order, the inventor has evolved an additional device to be placed on the dash in plain sight of the driver, which permits the latter to tell at a glance the condition of the car's brakes. This device is very simple (see Fig. 5) and consists of two sets of opposing springs, *A* and *B*, attached by means of flexible cables directly to the springs, which serve to hold the front and rear brakes away from their respective drums. As soon as the brakes are properly regulated, the four pointers all assume a horizontal position, corresponding to zero. Regulation is accomplished very easily by means of turnbuckles, placed in the cables in an accessible position, any defect being considerably multiplied by the indicating hands. In order to avoid confusion as well as to protect the controlling cables, the latter are passed through flexible tubes fixed on with staples.

A NEW LOW-TENSION MAGNETO.

It has long been considered somewhat strange that a concern having at its command such unequaled facilities for the production of such work as the General Electric Company, Schenectady, N. Y., should not have devoted its attention to the manufacture of ignition magnetos for automobile use. There has been a very marked increase in the adoption of this type of ignition during the past few years, so that the magneto is no longer considered merely as an adjunct to the highest-priced cars, but provision is made for it on the great majority of light cars, the selling price of which does not permit of its inclusion in their regular equipment. Reliability, ease of maintenance, simplicity, uniform sparking and freedom from trouble are qualities in which a well-built magneto has been found to excel. The machine is simple, self-contained, and eliminates much of the complicated wiring, besides being free to a very much greater extent from those petty annoyances that have long characterized the average ignition system, owing to the fact that its operation is purely mechanical and its speed does not exceed that of the motor.

The General Electric Company's experts have been making a study of the situation for some time past, and as the result of this, as well as the company's long experience in other lines of electrical work calling for the fulfillment of most exacting requirements, they have evolved a low tension magneto embodying all those desirable features of design and construction that experience has shown to be essential to the proper working of such a machine.

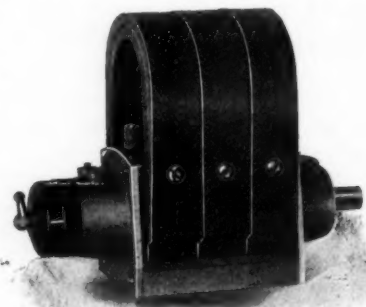
The general construction of the new magneto is of the most substantial nature and avoids all superfluous trimmings. Both the base and bearings are of bronze, finished with a sand blast, giving it an attractive appearance. A number of especially desirable features are noticeable in the construction of the armature. One end of the wire is brought out through the hollow shaft by means of steel conductor, the insulating bushing between the latter and the shaft being of bone and is, therefore, little affected by moisture or light. From this conductor it passes to a phosphor bronze helical spring and to the lower nut forming the outside terminal, thus avoiding any loose contacts. A hard



ESSENTIALS OF THE NEW MAGNETO.

rubber cover with a knurled exterior is screwed to the bearing and houses the contact completely. The grounded side of the winding is firmly fastened to the core, and a carbon brush insures good contact between the winding and frame.

The magnets are compounded and are fastened by springing on to the frame and securing with a single screw on each side, thus minimizing the detrimental effects of drilling the members. In this most important part of the generator, the experience of its makers in producing millions of permanent magnets for meters and other apparatus over a period of many years, has proved invaluable, and it may be taken for granted that the magnets forming the field of the new machine are surpassed by none, whether of foreign or domestic origin. The demagnetizing of the field is



G. E. CO.'S NEW LOW-TENSION MAGNETO.

prevented by making the armature core slightly overlap the pole gap when it is in the vertical position, thus avoiding a complete rupture of the permanent magnetic flux at any time. Both bearings are secured to the top and base of the frame rather than to the pole pieces.

Tests have shown that, on open circuit, the magneto's voltage is slightly in excess of 100 volts, this being easily obtained at a comparatively low speed, while a short-circuit current of approximately .4 ampere is available. In order to secure this high short-circuit current, the resistance of the armature winding has been made as low as possible, yet with a sufficient number of turns to give an adequate open-circuit voltage. It is the intention of the company to enter this branch of manufacturing on a large scale.

RUBBER IN ROAD DUST.

Everyone knows that in the dust of the London streets, among much more harmful constituents, there is much iron from the tires of wheels and the shoes of horses, says *The Autocar*. In fact, every road shows traces of iron from these sources. It struck us the other day when we were regarding somewhat sadly the flatness of a badly worn tire cover that there must be traces of rubber in the dust of an ordinary country road. Here was a tire which had once been circular in section which was now flat on the tread. The rubber had gone somewhere, and surely some of it must be found upon the roads which had taken their tribute.

Analyses of several samples of dust taken from different parts of the country show this conclusively. In the dust taken from the surface of a straight part of the road there was .042 per cent. of rubber, such as would come from a rubber tire. In the dust brushed from the road at a sharp corner there was .170 per cent. Careful examination of the sample reveals pieces both large and small of rubber tire, one piece being about 3-4 inch long and 1-2 inch wide. The result of this analysis is interesting in more ways than one. As we have said, it stands to sense that, as the tires wear, the rubber must go somewhere, and one would expect to find some of it on the road, though doubtless much of it is blown away in very finely divided particles. Another point shown by this investigation is that at a sharp corner the percentage of rubber in the road dust is more than four times as great as on a straight. It shows that not only are tires strained by corner work—a fact which everyone admits nowadays—but it also demonstrates that pieces are positively torn from them. When a cover has been in use for some time, and there are a number of surface cuts, any strain like sharply turning a corner puts so much work upon the parts of the cover that pieces are torn right out.

A NEW GEARLESS CHANGE-SPEED MECHANISM

By ERNEST COLER.

A NEW type of gearless transmission, which is noteworthy in more than one respect, has been invented by Robert Miller, a mechanical engineer, of 26 Beech Terrace, New York City. Though originally designed for use in commercial vehicles the Miller transmission also is well adapted for use in pleasure vehicles. In the ordinary friction drive, in which two discs are placed at right angles, a great many speed ratios are theoretically possible, but the amount of slippage inseparable from this type of friction drive has prevented its general adoption.

In the Miller transmission all the thrusts are self-contained, involving no stresses upon the engine crankshaft, and a much heavier spring than is used in ordinary friction drives can be used for keeping the friction surfaces in contact. In the older friction drives, in which the discs are placed at right angles, there is mathematically only a single line of contact relied upon to produce the required amount of friction. The discs, moreover, must be made of soft material and are subject to wear.

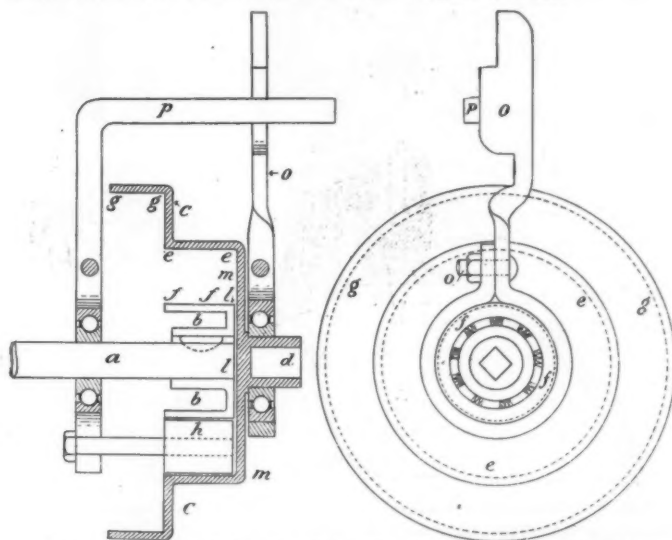


FIG. 1.—Section and elevation of the Miller friction change-speed gear.

The appliance illustrated herewith depends upon the principle of the osculatory circle, which, according to the calculus, is a circle having three consecutive points in common. With a given curve, if these circles be made short cylinders, the points of contact become lines of contact and the area between these lines becomes a surface. This greater contact surface, of course, makes it possible to make the friction surface of more substantial material than that ordinarily used in friction drives. Aluminum, cast-iron, or steel, lined with leather or provided with cork inserts, can be utilized, giving an exceedingly efficient drive.

Another peculiarity of the right-angle disc drive is that the portion nearest the center of the horizontal surface moves with less velocity than the portion near the periphery, with the result that a certain amount of slipping or grinding cannot be avoided even in the best constructions of this kind. Since it is possible to enclose the Miller Gearless Change-Speed Mechanism entirely it is rendered immune to the effects of dust, mud, water, etc.

Another of its advantages is that it can be connected to a selective lever control; it may have a "clutch" pedal for disengaging the contact without changing the speed ratio, a feature that is valuable in rounding curves and in driving through congested traffic. The light weight of the contrivance, its extremely low cost of manufacture, its durability, and its ease of operation give the Miller device many advantages over other forms.

The mechanism is shown herewith as a three speeds forward and two speeds reverse combination, but reference to the cut shows that by providing additional "steps" more speeds are obtained.

The device is shown in detail in Figure 1, in which *a* is the end of the engine shaft, *b* a friction pulley mounted thereon; *c* is a step friction pulley (similar to the step-cone on a lathe). It is obvious that if the pulley *c* be mounted at *d* on the propeller shaft, with a universal joint and its slip joint, and clamped



FIG. 2.—Showing the relation of the parts on the third speed or direct drive.

against the pulley *b* the two will rotate together like an ordinary multiple-disc clutch. If now the pulley *c* be so placed that its surface *e* comes into contact with the surface *f* of pulley *b*, and sufficient pressure be applied to force them into contact, the pulley *c* will travel around the pulley *b* and the ratio of the speed will be the ratio between the diameters of the two pulleys. If, further, the pulley *c* be moved bodily backward, so that the surface *g* is above *f* and both come into contact, the pulley *c* will again revolve, but at a lower speed, because of the greater diameter of the pulley *g*.



FIG. 3.—Position of the members on the intermediate or second speed.

To obtain the reverse, the idler *h* is interposed between the pulleys *c* and *b*; forcing *c* against *h* forces *h* against *b*. The rotation of *b* being in the same direction, the direction of *c* will be reversed, and if the surface *g* of the pulley *c* be utilized, the low-speed reverse will be obtained. To lock the change-speed mechanism together for the high-speed forward the surfaces *l* and *m* are brought into contact much in the manner in which a multiple-disc clutch is engaged.

The thrusts are self-contained, because if the pulley *c*, controlled by the link *o*, be forced into any of its notches against the link *p* (which contains the spring member) the pulling up on the spring is counter-balanced by the pushing down of the

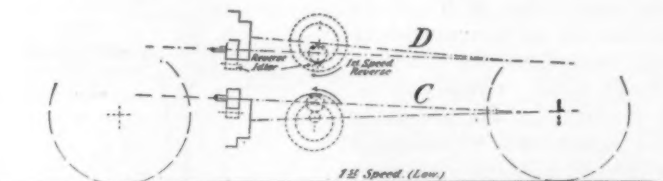


FIG. 4.—Illustrating the positions of first or low speed, and the first reverse speed.

one pulley into the other. The clamping of the high-speed plates is similarly self-contained. With certain types of ball and roller bearings not only radial but also axial thrust can be taken, so that two bearings are sufficient for all purposes.

Figure 2 shows the outlines of a car with a wheelbase of about 90 inches, 30-inch wheels, equipped with an engine of about 16-horsepower located in front. Four views are shown, *A*, *B*, *C*, and *D*, and from the illustrations the relative positions of the change-speed mechanism giving three speeds forward and two speeds reverse can be observed. The propeller shaft is shown with a universal joint at each end, a slip joint being assumed.

A LIGHT-WEIGHT "AIR BOTTLE" FROM FRANCE

TIRE pumps appear to be in danger of extinction. For a couple of years racing automobilists in both Europe and America have made use of compressed air tanks for inflation of tires, but the general public has remained true to the pump for want of a safe and practical appliance of the compressed air type.

The Michelin people have just brought out what they name their "air bottle," by means of which inflation, if not simplified, is certainly made less arduous than formerly. A compressed air tank weighing less than nine pounds, containing 450 liters of air compressed to 150 atmospheres, provides inflation for eight to ten large tires with no other labor than turning a tap. A couple of brackets hold the tank to the frame in the same manner as gas tanks so generally used in this country, or it may be kept in a box specially prepared for that purpose. The illustrations of the tank and its component parts are reproduced from the French review, *Omnia*.

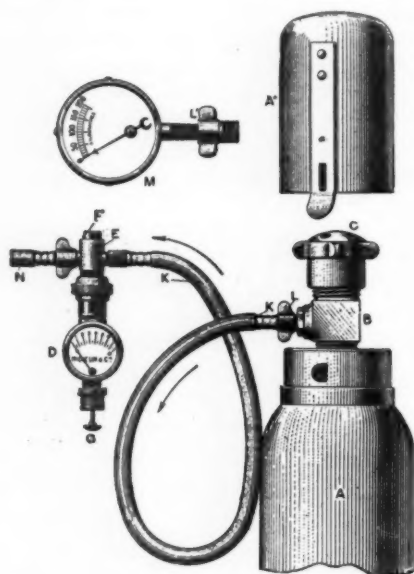


FIG. 1.—Head of bottle, with rubber connection and pressure indicator. Manometer, for measuring quantity of air in tank.

Simple as the improvement may appear at first sight, its realization was not possible until enormous progress had been made in metallurgy. As every person is aware who has had occasion to handle them, the compressed air tanks used by tire firms at race meets and other occasions are so heavy as to make their use prohibitive on a car. Nine pounds for 450 liters, or nearly one hundred gallons of air at 150 atmospheres, is a triumph for the metal working industry.

A further difficulty in the use of a compressed air tank was the construction of an automatic outlet. If a pneumatic tire were linked up directly to a tank of air compressed to 150 atmospheres the inrushing charge would inevitably cause a blowout, for the pneumatic tire is not made to withstand a pressure of much more than a dozen atmospheres. The outlet, or *détendeur*, as it has been named, needed to be simple in construction in order to be cheaply produced, for half the value of an appliance of this nature lies in its being procurable anywhere and an ubiquitous article must necessarily be sold at a moderate price.

The air contained in the tank A, Fig. 3, cannot escape through the outlet E and from there to the tire except when the plug D, mounted on the canal C, is unscrewed. Its passage then

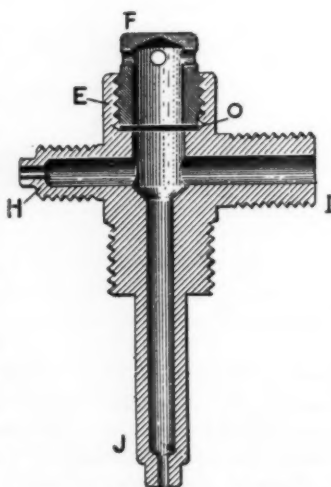


FIG. 2.—Cross section of air outlet, showing safety valve.

is through the two small channels H, through C; and out by E. A very important rôle is played by the small disk P, a circular steel plate, slightly cone shaped. If the pressure in the tank is high, the steel disk is flattened against the head of the chamber in which it is lodged, allowing only a small amount of air to filter through. As the pressure in the tank diminishes, the steel disk assumes its normal shape by reason of its elasticity, thus allowing more air to pass through. This arrangement provides for a constant rate of outlet whatever the pressure of the air within the tank, the disk being calculated to allow of the filling of a tire in about three minutes. If the cock were opened suddenly the compressed air would momentarily flatten the disk, allowing only a slight outlet, the right proportion, however, being obtained automatically in a few seconds.

Although a pressure controller is fitted to the apparatus and overcharge could only be possible through carelessness, pro-

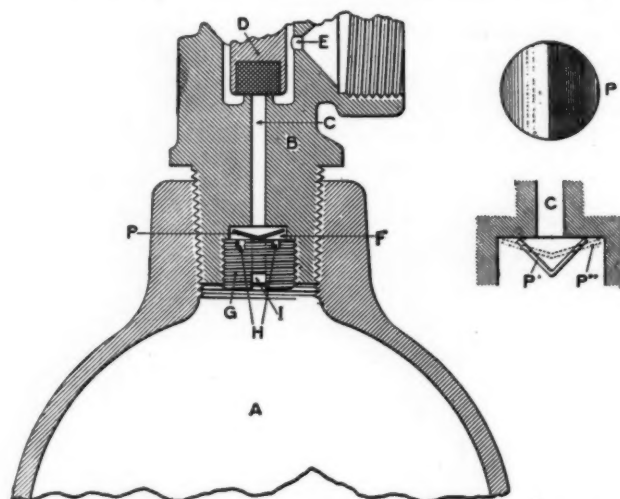


FIG. 3.—Cross of bottle head, showing details of pressure equalizer. Small drawing at right shows equalizer on enlarged scale.

vision has been made for automatically shutting off the flow of air when the pressure within the tire exceeds seventeen pounds. This is provided for by the paper washer O, Fig. 2, which will blow out at seventeen pounds pressure, allowing the air to escape through the opening F. A new washer can be inserted in a few moments. An independent indicator is provided, M, Fig. 1, to be screwed on at L, Fig. 1, in order to gauge the contents of the tank. A printed table pasted on the base of the tank indicates how many tires of a given size can be inflated with any given quantity of air.

OBTAINING MAXIMUM MILEAGE FROM TIRES.

Many automobilists, especially those driving heavy cars, make it a rule never to repair an outer shoe, their contention being that the most economical method is to use a tire until it bursts and is incapable of further service. It is certain that many tires are thrown on one side while still capable of giving several hundred miles of service, users declaring that they prefer to lose a little of the life of a tire rather than run it to the last thread and sacrifice an air chamber also. There is no reason, however, why a tire should not be used until the fabric is worn through, for it is rare that it quits active service without giving signs of its approaching demise; and to avoid the loss of an air chamber also, the oldest one should be used in the old casings. As a precaution, any weak places on the interior should be patched, otherwise the tire may suddenly blow out, although no external signs of weakness of the fibers are present.

LETTERS INTERESTING AND INSTRUCTIVE

QUERIES CONCERNING HORSEPOWER, ETC.

Editor THE AUTOMOBILE:

[959.]—Will you kindly give me some information in your "Letters Interesting and Instructive" column?

Horsepower, as I understand it, is a relative term. It may show itself either in speed or in ability to climb hills, depending to a certain extent on gear ratio. In what manner can the ordinary mortal who is not an expert mechanic ascertain whether a certain specified machine, rated at so many horsepower, will have the desired hill-climbing powers? In other words, if one is after a high-powered, low-speed machine, what formula can he follow to know what he is getting before he buys?

Is there any method to test a double Pittsfield coil, to ascertain the amperage that is being used in running the engine?

During a period of eight or ten months my coil was very economical in the use of dry batteries, consuming in that time only three sets, and giving the best of results and satisfaction. The platinum points were then slightly pitted and a friend (?) filed the points, but in so doing must have changed the adjustment or tension of the spring, as the coil has consumed more batteries in the last six weeks or two months than all the time before. Where shall I look for the adjustment, and how shall I make it? TREMBLER.

Walden, N. Y.

Formulae are of little or no value in such a case as this. Why not get into the machine and try it on some of the worst hills in the locality and note its performance? Agents are always willing to demonstrate their cars to the satisfaction of prospective purchasers, and "being shown" is worth more to the "ordinary mortal" than all the figuring he can possibly do. Take any high-powered modern car, and its hill-climbing capacity is almost entirely a matter of gear ratio. If its owner wishes to be able to climb unusually steep grades without dropping to a lower gear he must naturally sacrifice something of the car's speed on the level. But in choosing a car for hill climbing it is advisable not to gear it too low, as it then becomes necessary to race the engine in order to obtain anything more than a moderate speed on the level.

Take a coil-current tester, or low-reading ammeter, calibrated from 0 to 3 amperes by tenths and insert it in series in the primary of the coil to be tested—that is, connect one terminal of the instrument to the primary terminal of the coil and the other to the battery wire, so that all the current being used by the coil must pass through the ammeter. Start the engine and let it run, meanwhile adjusting the trembler of the coil until the instrument gives as low a reading as possible consistent with regular running of the engine. Do the same with the other coil. Probably the tremblers of your coils have been screwed down so that the current consumption is excessive, as any coil can be adjusted to take 3 to 5 amperes, though when working efficiently it should not require more than .3 to .8 ampere; some coils, however, will not work on less than one ampere or over. The ammeter mentioned can be procured from any supply dealer and is similar to the ordinary battery "tester."

DATA ON FLYWHEELS FOR SIX-CYLINDER MOTOR.

Editor THE AUTOMOBILE:

[960.]—Will you kindly inform me through the columns of "The Automobile" which is the best location for a flywheel on a six-cylinder engine, to give best results, and also about what weight should they be? W. S. REID.

Indianapolis, Ind.

Opinions differ as to what is exactly the best point to place the flywheel on a multi-cylindrical engine, considered entirely from a theoretical point of view, but current practice favors the inboard end of the engine owing to the custom of combining the flywheel and clutch. Your second question is rather difficult to answer without other data than the fact that the engine has six cylinders. Its speed and size are somewhat important factors.

EFFECT ON GEAR RATIO OF LARGER WHEELS.

Editor THE AUTOMOBILE:

[961.]—I am an interested reader of "The Automobile," and have derived considerable benefit from the columns devoted to questions and answers, and should appreciate it if you will advise me in regard to the following in your next issue.

I have a 40 horsepower touring car, geared 3 to 1, with 34-inch wheels, and should like to know, in the event of putting on 36-inch wheels, how much higher it would gear the car, and how much speedier it would make it; also, if it would make any appreciable difference in the ability of the car to climb hills, as I do not want to make the change if it is likely to result in the car being weak on stiff grades, such as are encountered in general touring.

New York City.

SUBSCRIBER.

So far as the actual gear ratio of the car is concerned, putting larger wheels on cannot effect this. The road wheels will turn once for every three turns of the motor crankshaft regardless of the size of the driving wheels. To make an alteration in the gear ratio, it will be necessary to change the relative size of the bevel and driven pinions at the rear axle, or the chain sprockets, according to whether the car is double-chain or shaft-driven. Increasing the wheel size has the effect of increasing the gear ratio, of course, as owing to the greater size of the new wheels, the latter can make only .942 revolution in the same time that the 34-inch wheels would make a complete turn, this difference being accounted for by the greater speed attained. As the 34-inch wheel travels approximately 8.9 feet per revolution, at a motor speed of 1,000 r.p.m., it would cover about 2,970 feet per minute on the direct drive, or a little better than 33 miles per hour. The 36-inch wheel covers 9.4 feet per turn or 3,133 feet per minute, making the speed a little over 35 miles per hour at the same number of revolutions per minute. We should think the fitting of the larger wheels would make little appreciable difference in the car's ability to climb hills, particularly in view of the size of the motor, and in any event it cannot make the car weak whatever the grade may be. It may necessitate dropping to a lower gear on hills a little oftener than is now the case, but the increase in comfort as well as in the appearance of the car and the greater clearance should more than compensate for this.

IS THE USE OF ACETYLENE GAS DANGEROUS?

Editor THE AUTOMOBILE:

[962.]—Herbert G. Andrews, of the U. S. Title Guaranty & Indemnity Company of Brooklyn, advised us a few days ago at the show that, having read some letters in your paper of April 25 in regard to acetylene gas passing through copper tubes, he had decided not to use any more acetylene, as he was afraid of the danger of explosion. It seems that in a few of the other later papers there were some replies to this original letter, stating that acetylene gas passing through copper tubes was absolutely dangerous. We have never heard of this, and would be glad to have you take the matter up and enlighten your readers one way or the other.

AUTOLYTE MANUFACTURING COMPANY,

New York City.

A. H. Funke, Manager.

"When at the end of last season's use my car was put away, the lamps and generator were removed, leaving the rubber gas tubing which attached the copper tubing to the lamps and generator hanging loose with the ends open. A short time ago when overhauling the car, parts of the copper tubing were found bent in places, and upon taking the copper tubing in my hands to straighten these bends, was very much surprised to hear, as soon as the bending was started, a very considerable explosion and to see flames shoot out at the ends of these tubes. The explosion was nearly as large as a pistol discharge, and of sufficient force to tear loose the section of rubber dangling on the ends and throw it clear across the garage—a distance of 20 or 30 feet.

"There was no fire or open light to ignite any charge of gas that may have remained in the tube during its weeks of idleness, and as can well be imagined, the writer was considerably surprised. On bending the other copper tube leading to the other lamp, the explosion was repeated in exactly the same manner, and it seems quite improbable that the slight bending of the tube could

create sufficient frictional heat to ignite the gas that might have remained in these tubes."

This letter from B. A. Burtiss, Schenectady, N. Y., was published in the issue of THE AUTOMOBILE on March 14, 1907, and the letter of April 25, to which you refer, was but one of the many explanations offered by a number of correspondents. The first of these was from F. R. Covert, Hovington, Kan., and was published in the issue of April 11, 1907. It gives a layman's explanation of the phenomenon and is as follows:

"I have experimented to quite an extent with acetylene gas and generators, and find that acetylene gas leaves an explosive deposit on brass, copper and silver, which will explode under very slight friction. This deposit seems to be greatly increased if the generators are overworked, and the hot, freshly generated gas comes in contact with any of these metals. This certainly was the cause of the explosions Mr. Burtiss experienced while bending the copper tubes. The writer was quite badly burned at one time, five or six years ago, while removing a copper spray pipe from a large generator; the deposit igniting and causing the gas to explode, and has since often wondered why generator manufacturers use so much copper and brass under such circumstances."

The letter of April 25 referred to was from L. P. Lowe, San Francisco, Cal., and gave a somewhat fuller explanation of the matter, while a later correspondent, E. T. Senseny, M.D., St. Louis, Mo., gave the chemistry of the phenomenon. His letter follows:

"The accident was caused by the explosion of the cuprous salt of acetylene C_2H_2 , Cu_2O . It is a reddish-brown substance insoluble in water, but dissolves in hydrochloric acid, with the evolution of acetylene. When dry it loses the molecules of water and becomes carbide of copper, C_2Cu , and when dry it explodes violently at $120^\circ F.$ or by friction. (See Keyser, Remsen, Newth on Acetylene and Its Compounds.) Dr. Keyser of Washington University is an authority on this subject."

A more detailed technical explanation of the chemistry of the matter was given by C. J. Frankforter, of Lincoln, Neb., in THE AUTOMOBILE of May 16, 1907.

A DISSERTATION ON THE SELDEN PATENT.

Editor THE AUTOMOBILE:

[963.]—If the following contains sufficient of public interest, which I hope you will believe, you may publish it as a donation to public information, and as a tribute of one early inventor to another.

I am minded to take up the cudgels along with the writer in the October 10 issue, upon the Selden controversy. Knowing Selden as I did in 1880-85, at which time I, as well as he, had pursued every patent and important publication in the English language upon gas and steam engines, and road locomotion; I having practical and patent experience, and interested then, as now, both for and against sustaining patent claims.

Previous to this I had heard of a steam buggy at Albany fair about 1865. The first traction farm engine (in this country) was made by my townsmen about 1868, and I had helped to make the first steam wagon, which was used three years, carrying its load and another wagon anywhere.

That the automobile would have come without Selden, and the telephone without Graham Bell, I certainly believe, but that he labored toward its accomplishment with money, experiment and counsel I certainly know, and this was with discouragement and ridicule, as was the case with Edison, Bell (telephone), Goodyear, Howe and others.

Selden then had an engine of Lenoir principle; a two-cycle pump compression engine, and also multiple cylinder engines.

In 1882 I made an indicator, and took with his engine the first indicator diagrams (to the best of my knowledge) ever taken from a gas engine in this country; and these, reaching 225 pounds, were the first definite knowledge of the pressure or action of gas, except that an explosion was supposed to be "destructively and dangerously unmanageable." (Steam practice then was 60 pounds; now it is 100 to 250 pounds.)

This was previous to the blowing up of Rochester's streets by naphtha, and Selden's court testimony thereat, that naphtha would not explode; which evidence included the first public exposition of facts now well known, viz., that only critical mixtures of vapor with air are explosive. This occurred previous to the use of the first engine operated with liquid hydrocarbon; which he then predicted and was experimenting with, being, of course, ridiculed therefor.

One of my own inventions for the then future vehicle I was advised to patent, but believed that the term of my patent would

pass before such development would be realized, which was the case, but which feature was patented by a later inventor (my townsman), and now in general use upon the best cars, to his financial benefit.

The patent law reads that "an application for a patent is a legal reduction to practice," and, as an instance, Bell's crude patent is practically held to cover all transmission of speech by electricity; notwithstanding the fact that it was not operative until made so by others. Whereas Draughbach, who claimed to speak first, was decided against.

It should be remembered that where a patent is valid, that a monopoly to the extent of the patent exists as a matter of right; also that monopolies exercise both a beneficial and non-beneficial influence.

A peculiarity, in contrast to the defense: Mr. Selden does not talk much for publicity, but does his talking before the court; hence his legal success, as well as public obscurity. However interesting to the public, it is established that "pro-publicity loses the respect of the court," and prejudices it against that side of the case.

This, nor any amount of open controversy will not decide such a case, which, like that of Thaw, Haywood, and Bismarck's war problems, will not abide by public demonstrations, theorists, nor effusions of attorneys or elaborations of trials, but will turn upon features, like iron and blood, entirely different from which the valuable counsel laboriously promulgated.

The talk of the dear public, which is always right at first, and most of the way through, to find they were wrong at last, reminds me of Barnum's "The public want to be humbugged," and Prof. Sweet's "Things that are usually wrong" (in "The American Machinist"), and somebody else's adage, "the public knows it all beforehand, and finds it aint so behindhand," or "threshed out in public one way, and found legally to be another."

But it's lots of fun for the dear, fond public, so why stop them?
Syracuse, N. Y. F. R. WILLIAMS.

MAKING BATTERIES IN THE FAR EAST.

Editor THE AUTOMOBILE:

[964.]—It may be of interest to you to know this company has opened up a new industry in the Far East, for the manufacture of a first-class dry battery. The writer is an automobilist and constant reader of your paper, and after experiencing the troubles and tribulations of trying to operate machines in this country with batteries imported from the States, at least three months old to start with, decided him to put in an up-to-date factory and produce fresh dry cells.

The great trouble with the imported (American) cells is caused by sea voyage of 60 to 70 days, the internal consumption being increased by the great heat of the vessel's hold, and such cells seldom give over 15 amperes, and 10 to 12 are the average. We do not allow a cell to go on the market that does not show 25 amperes, and the average is above 27 amperes.

Automobiling is becoming more and more popular, and the demand for good dry cells is constantly increasing. We have a branch in Manila, and are just opening another in Sydney, New South Wales. We have in the city of Manila over 150 automobiles, which, I am sorry to say, are mostly of French manufacture.

ORIENTAL BATTERY COMPANY,

Hong Kong, China.

F. H. THOMPSON, General Manager.

EASE WITH WHICH MACHINES ARE STOLEN.

Editor THE AUTOMOBILE:

[965.]—It might be of some news interest and also put others on the alert to know of my misfortune and afterward good fortune.

On the night of September 25 a thief broke into the garage at this place and took my auto, a Model F Buick. Every effort was exerted to get the machine back, with the result that it was recovered on October 4. It shows how easily a machine can be taken and gotten away without the thief being caught at the time. The machine was taken just twenty-eight miles, left in the timber, and even the farmer on whose place the machine was left knew nothing about it. I have the Buick agency at this place.

Iola, Kan.

P. S. MITCHELL, M.D.

FOR FLORIDIAN WHO WANTS A WIDE GAUGE.

Editor THE AUTOMOBILE:

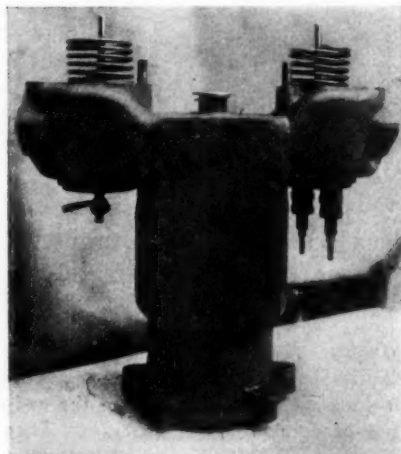
[966.]—In your issue of October 10 a letter appears, signed T. A. Ansley, inquiring for a runabout built for Florida roads. The Cadillac Company manufactures a runabout with the standard Southern gauge. If he will address the Cook Auto Co., Orlando, Fla., he will be able to obtain all the information he desires on the subject.

R. J. THOMPSON.

Cleveland, O.

CONSTRUCTIONAL DETAILS OF THE ELLSWORTH

IN the course of several years' experience, every autoist, particularly if he be technically skilled, evolves in his own mind the design of a car embodying his own ideas of construction, but it is not given to many to be able to see such an ideal materialized. However, this has been the case with John M.



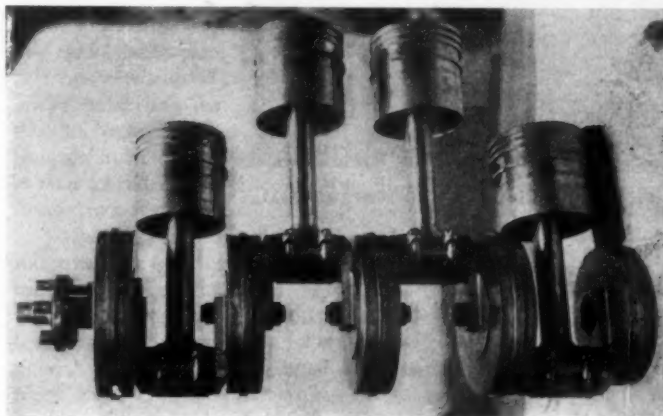
CYLINDER CASTING AND VALVE ASSEMBLY.

Ellsworth, and on that account the new Ellsworth car is unique. Commercialism has been relegated to the background entirely in its design and construction, the prime object of its builder being to see those features that have appealed to him as superior to existing forms perpetuated on a car of his own design. To do this Mr. Ellsworth has established his own shop, employing a large force of skilled workmen, and collaborating with Thomas J. Fay, has turned out a car

which is of far more than passing interest, owing to the many novel features of design and construction that it involves. The materials employed are chrome steel, chrome nickel steel and chrome vanadium steel wherever alloy steels could be utilized, all such parts being in the shape of die forgings.

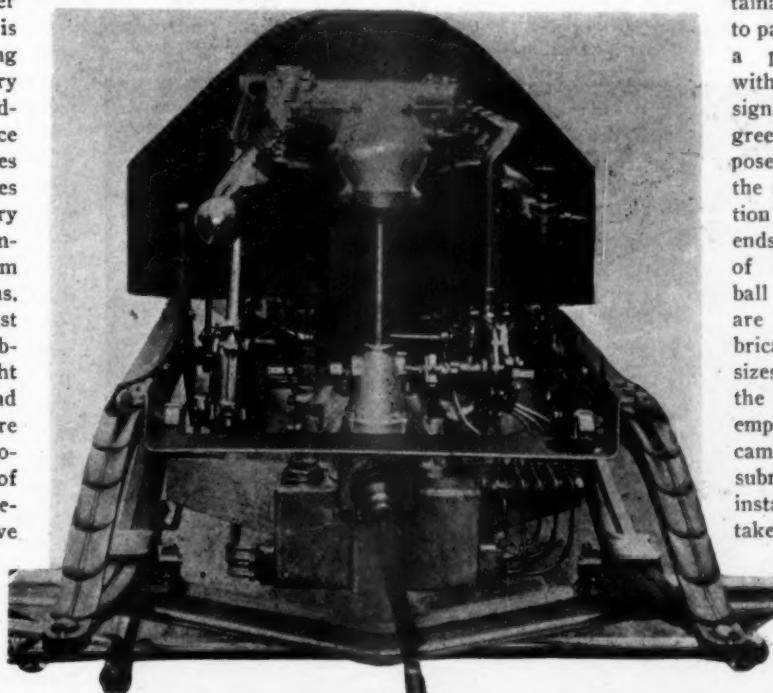
The motor is of the four-cylinder type, mounted forward and attached directly to the side members of the main frame, no sub-frame being employed. It is placed slightly to the rear of the forward axle, so that the face of the radiator about comes flush with the latter. This not only greatly enhances the appearance of the car as a whole, but places the entire weight between the two axles, in addition to facilitating the steering. That the motor is of the four-cylinder vertical, water-cooled type is the only conventional thing about it, as in practically every other respect it differs considerably from standard practice as represented by current types and involves numerous features of merit which have been very cleverly worked out. For instance, as will be apparent from the accompanying photographs, the cylinders are separately cast with open water-jackets, subsequently closed with light steel plates at either side and screwed on. The valves are oppositely disposed, being located in outboard chambers of the Mercedes type, and are mechanically operated from above by a novel superimposed form of camshaft, completely encased in an aluminum housing, the details of this part of the engine also being well illustrated by the photographs. The rocker

arms are of special design, are made of bronze and work on Hess-Bright ball bearings, which also characterize the majority of the other moving parts of the motor. This is true of the crankshaft, which is of the built-up type, supported on very liberal sized bearings inclosed in special bronze retainers, which house them completely. The camshaft is driven from the crankshaft through a vertical shaft and bevel gearing, placed forward. Such accessories as the oil and water pumps are driven from separate shafts, the latter being located to the right and the former below the vertical shaft mentioned, as will be plain in



BUILT-UP CRANKSHAFT SHOWING LIBERAL SIZE OF BALL-BEARINGS.

the forward view of the motor shown at the bottom of this page. An extension of the camshaft, which is carried through the dash at the rear, is utilized for driving the magneto, which, together with the carbureter, is located in the specially recessed dashboard in a very accessible position. The crankcase is of a special aluminum alloy, which is also true of the remaining housings about the motor, the dash and the gear-case. In fact, throughout every part of the car it has been the aim of the designers and builders to use only the very finest materials obtainable, the alloy steels having to pass a flat bending test under a powerful steam hammer without showing the slightest signs of rupture at the 180 degree bend. With the same purpose in view, every bearing on the car, with the single exception of the wrist-pins and big ends of the connecting rods, is of the Hess-Bright annular ball type. All these bearings are housed and separately lubricated, and in every instance sizes considerably in excess of the maker's ratings have been employed. In the case of the camshaft the ball bearings are submerged in oil, and in every instance great pains have been taken to mount these bearings in a manner that marks a considerable advance. On the chrome-nickel steel crankshaft, the design of which is patented by Mr. Ellsworth, the ball bearings are fit-



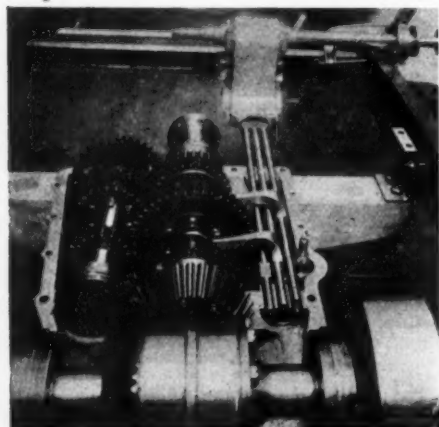
SHOWING FORWARD SUSPENSION

AND DETAILS OF OILING SYSTEM.

ted directly to the crank members without the intervention of any packing member and are inclosed in special bronze housings.

Though the placing of the motor accessories such as the carbureter and magneto will seem strange at first, it is doubtless the experience of every autoist that protection against the elements

is an essential thing in their case, and the dashboard location combines this with accessibility. The low-tension timer for the battery side of the ignition system is also located in the same place, and it will be noted that the duplicate spark plugs are set in the under side of the inlet valve. The design of the inlet manifold is particularly noteworthy as representing such a departure from current practice.



CHANGE-SPEED GEAR AND DIFFERENTIAL.

But the features of interest of the new Ellsworth are not confined to the motor by any means. The clutch is of a special type evolved by Messrs. Ellsworth and Fay and on which they have taken out patents. It consists of a hardened drum attached to the driven shaft and a spiral band made fast to the driving member, so arranged as to be constricted at will. This drum is tapered, as is also true of the spiral band, the whip end of the latter being pinched between the drum and the housing. The result is that the band constricts automatically when its other end is held as the motor tends to wind it up on the drum. Chrome nickel steel is used throughout in its construction, and the clutch as a whole runs in oil, so that it can be made to slip at will, or hold as tightly as if the shaft were a single piece of metal.

The change-speed gear is of the sliding type, giving four speeds forward and reverse by the usual method of selective operation, and, as in the motor, special pains have been taken with the mounting of the bearings, which are all of the annular ball type, while the shafts and pinions are of the finest alloy steel. The gear-set and differential are inclosed in the same aluminum

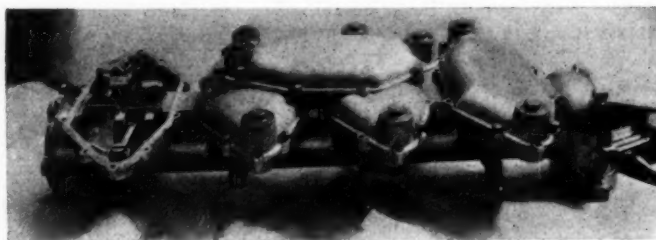
housing, final drive being by means of side chains, though it is the intention of the builders to construct a shaft-driven type of car for those who prefer it. The braking system is of especial interest, as in addition to the regular differential and emergency brakes the car is equipped with an auxiliary differential brake. All the brake drums are of special steel and are of unusually liberal proportions. The surfaces are heat treated to make them more durable, while the bands are of special steel lined with pure annealed copper, ingenious and simple means for making adjustments being provided and also for equalizing, which is effected



BALL-BEARING BRONZE ROCKER ARMS WHICH ACTUATE THE VALVES.

without the introduction of an inertia component, such as a heavy cross bar or similar means.

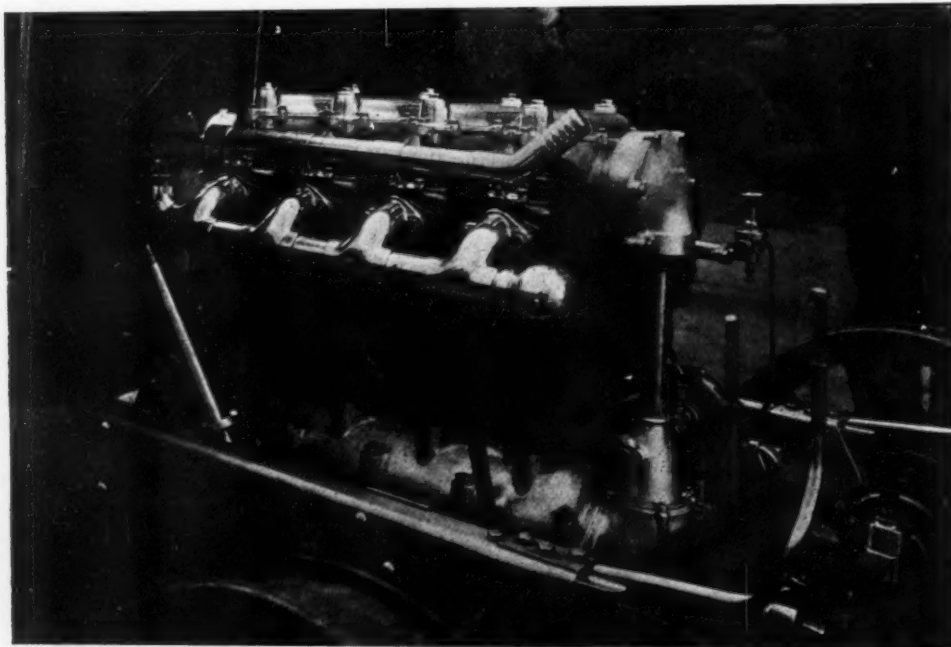
The chassis suspension consists of full elliptic springs in the rear, with three-quarter elliptics in front, but the latter are of unusual design in that their ends are riveted directly to the ends of the frame without the use of dumb irons or shackles. They



ALUMINUM HOUSING FOR CAMSHAFT AND ROCKER-ARMS.

are of Krupp alloy steel and are made without any joints. The steering gear has been constructed throughout of similar material, and great pains have been taken to make it absolutely proof against breakdown. Considerable ingenuity is revealed in the design of the control, which consists of four small bronze levers

with finger ends. These levers pass through racks in a housing located directly beneath the mahogany trimmed steering wheel, and do not rotate with it. They may be operated by either hand at will and are so located with regard to the wheel rim that they can be used without removing the hand from its accustomed position. Speaking of the steering gear, every part of this, such as the lever arms, connecting rods and the like, are all of chrome nickel steel, the cross rod being made of a solid bar of this material accurately drilled out. It is absolutely free from uncertain joints or fastenings, but, despite its alloy-steel, jointless construction, safety devices are provided in addition, and the makers feel quite certain that nothing has been left undone to evolve a steering gear that shall be as safe and reliable under all conditions as it is possible to build. The result of using alloy steels is manifest in the low weight of 1,900 pounds.



NOVEL INTAKE MANIFOLD, SIDE VIEW OF CAMSHAFT DRIVE AND WATER CONNECTION.

AMONG THE BUSY CLUBS OF AUTODOM

ST. PAUL'S CLUB IS GROWING AND PROSPEROUS.

ST. PAUL, MINN., Nov. 11.—Perhaps the most enthusiastic meeting in the history of the St. Paul Automobile Club was the annual meeting held on Monday of last week at the rooms of the Commercial Club, when officers were elected for the ensuing year, and plans for the future of the organization, especially those pertaining to the new clubhouse, were discussed. The building committee reported that the clubrooms are about ready and will be turned over to the club next week. The rooms will not be ready for occupancy for some little time yet, as the decorating has not yet been done, nor is the furniture ready. The furniture has been contracted for, however, and so has the heating. The lighting contract has not yet been awarded. The furniture will be mostly of the mission style. The club is planning to hold a formal house-warming towards the latter part of December, or as soon as the clubrooms have been entirely decorated and furnished. In March the State Association will hold its annual meeting in the St. Paul clubrooms, and it is planned to make this a notable function.

H. S. Johnson, the secretary, who has been one of the most persistent workers in behalf of the club, will probably have a paid assistant to help him with his work and take charge of the building as soon as the club moves to its new quarters. The treasurer reported that there is about \$2,000 in the treasury, \$1,000 having been made on the race meet held last summer. The secretary reported that there are now 140 members in the club, against eleven at this time last year.

The following officers were elected: President, Reuben Warner; vice-president, R. M. Neely; secretary, H. S. Johnson; treasurer, W. O. Washburn; board of directors, Oscar L. Taylor, F. B. Lynch, T. W. Ingersoll, and W. R. Edwards.

Plans are being formulated for an automobile day during the convention of the Mystic Shriners in St. Paul next July, and for a race meet at the State fair grounds.

HARRISBURG PLANNING 1908 ENDURANCE RUN.

HARRISBURG, PA., Nov. 11.—Plans for the annual endurance run of the Motor Club of Harrisburg, which will be held early next May, are now being made by the contest committee. Three routes have been mentioned, but the one leading to Baltimore via Hagerstown, with the return via York and Lancaster, seems to be the favorite. The second route mentioned is to Philadelphia via Allentown, while the third leads through the coal regions with the night stop at Wilkes-Barre. Many cars are expected to be entered in the contest, which will be made much stricter than last year in order to prevent any abundance of perfect scores. The four cars tied for the touring car trophy last year will enter the next contest as competitors for both the 1907 and 1908 trophies. R. H. Johnston, of New York, will likely act as referee for the run.

Active steps taken by the Motor Club of Harrisburg for the betterment of roads in the vicinity of the Capital City of Pennsylvania has led to operations on three country roads and plans for the building of a five-mile boulevard along the Susquehanna river, just north of the city.

The Motor Club has appropriated a sum of money to pay off part of the debt on the Fort Hunter turnpike with a view of converting the road into a sixty-foot wide boulevard.

WILKINSBURG CLUB HOLDS ANNUAL ELECTION.

WILKINSBURG, PA., Nov. 11.—The annual election of the Wilkesburg Automobile Club resulted in choosing the following board of officers for the ensuing year: President, Dr. W. R. Stephens; vice-president, S. L. Smith; secretary and treasurer, Dr. W. C. Cook.

SUCCESS ASSURED FOR THE NEW JERSEY RUN.

NEWARK, N. J., Nov. 11.—Conducted on lines entirely different from those that have been customary in previous events of a like nature, the 24-hour endurance run of the New Jersey Automobile and Motor Club, which will be held on Friday and Saturday of the present week, November 15-16, promises to be a great success. Over twenty entries have been received to date and more are promised. The contest will be a road test, the contestants being required to traverse a circuit five times, going through Newark, Bloomfield, Glen Ridge, Montclair, Verona, Caldwell, Pine Brook, Parsippany, Rockaway, Dover, Kenil, Morristown, Bernardsville, Far Hills, Bedminster, Somerville, Bound Brook, Dunellen, Plainfield, Scotch Plains, Springfield and Irvington. The single circuit is about ninety miles in length.

The competing cars will start from the clubhouse, 1034 Broad street, Newark, between 2 and 3 o'clock Friday afternoon. Contestants are limited to members of the club, and a silver cup will be awarded to each competitor finishing with a perfect score. Each car will carry an official observer and its full complement of passengers. Traffic regulations must be strictly observed. A system of penalizations has been provided for, including a loss of two points for arriving at a control either three minutes before or after the scheduled time, and a loss of four points for stopping the motor to make repairs. There will be no class division, all cars, irrespective of horsepower or selling price, being eligible. The race committee in charge of the event consists of W. C. Shanley, N. B. Niblette, J. H. Wood, Paul E. Heller, L. T. Wiss, F. A. Croselmir and H. A. Bunnell.

The first issue of the *Motor Record*, the official organ of the New Jersey Automobile and Motor Club, has made its appearance. William S. Thomas, a well-known Newark newspaper man, is responsible for the appearance of the *Record*, which is well printed and newsy, and will go to every member of the club, which now has some 800 members.

VISITING AUTOISTS HAVE 48 HOURS IN PHILA.

PHILADELPHIA, Nov. 11.—The Automobile Club of Philadelphia is notifying its members of the recent announcement of the Director of Public Safety that he intends to enforce the State ordinance requiring drivers of automobiles in Philadelphia to obtain a license from his department. This license is obtained at the Bureau of Boiler Inspection at a cost of \$2 for the first year and \$1 for renewals for each succeeding year. Visiting autoists from other cities are given forty-eight hours grace while in Philadelphia. There has been much opposition expressed by Quaker City autoists to the special tax imposed by the city, and its enforcement will undoubtedly prove a very unpopular measure. Far seeing automobilists hope its enforcement will result in its

The club committee on routes and sign posts has arranged for the erection of numerous signs at different points and also have signs bearing the words "Blow Your Horn" for cross roads which the local authorities deem dangerous. The State law provides that a gong or other alarm shall be sounded when approaching any street or road crossing.

NEW CLUB IS ORGANIZED AT JOHNSTOWN, PA.

JOHNSTOWN, PA., Nov. 11.—This city now has a full-fledged auto organization, known as the Johnstown Automobile Club. The movement for the club's organization was started some time ago, and culminated in meeting for organization, at which the following board of officers were elected: President, Charles S. Price; vice-president, W. F. Murdock; secretary, Walter Dowling; treasurer, John L. Stibich; board of trustees, J. Leon Replogle, Dr. Francis Schill, Jr., and F. B. Cook. The members of the new organization are very enthusiastic over the pros-

pects and will at once establish a permanent headquarters. The club will undoubtedly become a member of the Pennsylvania Motor Federation in the near future.

CINCINNATI'S CLUB HAS AN ORGAN.

CINCINNATI, Nov. 11.—The first number of the Automobile Club of Cincinnati *Bulletin* has made its appearance, and contains some interesting statistics which show that a very large proportion of the autoists of this city belong to the organization. There have been issued since the first of the year 750 license tags to automobile users in Cincinnati, and as the club has a membership of 230 it will be seen that almost one-third of the automobile owners in the city are club members. The report of the sign-board committee of the club shows that during the past season 148 signs have been erected on the roads in the vicinity.

ANNUAL CLIMB OF RHODE ISLAND A. C., NOV. 16.

PROVIDENCE, R. I., Nov. 11.—The annual hill climb of the Rhode Island Automobile Club for the Prescott Knight trophy will take place Saturday next on the hill leading to the residence of the donor at Riverpoint. The Knight cup has been won twice by L. F. N. Baldwin, and should he be successful again on Saturday, the trophy will become his permanent property. Eugene M. Swain is chairman of the committee having the event in charge.

AURORA AUTOISTS WANT CLUBHOUSE.

AURORA, ILL., Nov. 11.—There is well authenticated talk among the members of the Aurora Automobile Club in favor of a clubhouse, and as soon as a suitable location can be secured a house will be leased and furnished. The Aurora club is growing fast and the necessity for new quarters is becoming more than ever apparent.

ROAD WEARING OBSERVATIONS OF AN AUTOIST.

Angus Sinclair, president of the New Jersey Automobile and Motor Club, tells, in the club's official organ, *The Motor Record*, of his experiments in the matter of alleged damage to roads by automobiles:

When a fast-running automobile is seen rushing along in a cloud of dust, the beholder naturally receives the impression that the car is carrying with it a considerable portion of the roadway material, and that a succession of cars would quickly sweep bare the surface of the highway. This is the superficial impression, and it has given rise to persistent lamentations concerning the destructive action of automobiles in disturbing the materials which bind the surface of macadam roads together. Things are not always what they seem, as every engineer and investigator finds out many times, so moved by knowledge of mistakes being made through superficial impressions, I determined to make some tests to ascertain with some exactness how much the surface of the roadway is moved by passing vehicles.

Some portions of the main road leading from Springfield towards Scotch Plains have the surface badly attenuated by the action of horses' feet, and the individual stones stand out like blunt spurs or short harrow teeth. Last September during a dry time I collected about one hundred pounds of road dust and spread it over part of one of these bare spots and watched results. I examined the place every third or fourth day, and at the end of eleven days could distinguish no particular difference. On the twelfth day after the experiment began there was a heavy shower of rain. Having been caught in the shower near the scene of my experiment, I proceeded to the spot to examine the effects of the rain, and found that numerous miniature river beds had been cut through the dust covering. When the surface dried the covering scattered flat again, but it had become decidedly thinner. About a week later there was a severe rain storm, and when I ventured the trip to examine my road covering, all traces of my labor had been obliterated.

From constant observations of the Munn avenue, East Orange, road surface, which was covered with a dust-preventative material some months ago, I am persuaded that the real need for the preservation of our roads is a surface covering that will prevent the rain from washing away the binding material.

THE AUTOMOBILE CALENDAR. AMERICAN.

Shows and Meetings.

- Nov. 16-23.....—Baltimore, Third Annual Automobile Exhibition, Automobile Dealers' Association. B. R. Johnson, manager, Piper Building.
- Nov. 30-Dec. 7.....—Chicago, Coliseum and First Regt. Armory, Eighth Annual National Automobile Show, and First Annual Commercial Vehicle Show, National Association of Automobile Manufacturers.
- Dec. 9-14.....—Detroit, Riverview Park Auditorium, Detroit Automobile Dealers' Association. LeRoy Pelletier, manager.
- Dec. 9-14.....—San Francisco, Coliseum, First Annual Automobile Show, Automobile Dealers of California. N. R. Cooper, manager.
- Dec. 14-21.....—St. Louis, Mo., Jai Alai Building, Second Annual Auto Show, St. Louis Automobile Manufacturers' and Dealers' Association. D. M. Strauss, manager.
- Dec. 28-Jan. 4.....—New York City, Madison Square Garden, Importers' Salon. C. R. Mabley, manager.
- Feb. 10-15.....—Detroit, Light Guard Armory, Tri-State Automobile and Sporting Goods Association, Seventh Annual Show.
- Mar. 7-14.....—Boston, Mechanics' Building and Horticultural Hall, Boston Automobile Dealers' Association. Chester I. Campbell, manager, 5 Park Square.
- Mar. 9-14.....—Buffalo, Convention Hall, Sixth Annual Automobile Show, Automobile Club of Buffalo. Dai H. Lewis, manager.
- Mar. 21-28.....—Toronto, Canada, St. Lawrence Arena, Automobile Show. R. M. Jaffray, manager.
- Apr. 5-12.....—Montreal, Canada, Arena, Third Annual Automobile and Sportsman's Show. R. M. Jaffray, Mgr.

Motor Boat Shows.

- Dec. 7-14.....—New York City, Grand Central Palace, National Association of Engine and Boat Manufacturers. Chester I. Campbell, manager, 5 Park Square, Boston.
- Jan. 1-8.....—Chicago, Coliseum, National Association of Engine and Boat Manufacturers. Chester I. Campbell, manager, 5 Park Square, Boston.
- Jan. 25-Feb. 1.....—Boston, Mechanics' Building, National Association of Engine and Boat Manufacturers. Chester I. Campbell, manager, 5 Park Square, Boston.
- Feb. 3-8.....—Buffalo, Convention Hall, First Annual Power Boat and Sportsman's Show, auspices of Buffalo Launch Club. Dai H. Lewis, manager.
- Feb. 20-Mar. 7.....—New York City, Madison Square Garden, Fourteenth Annual Motor Boat and Sportsman's Show.

Races, Hill-Climbs, Etc.

- Nov. 15-16.....—Newark, N. J., 24-hour Endurance Run, Automobile Club of New Jersey.
- Nov. 16.....—Providence, Annual Hill Climb, Rhode Island Automobile Club.
- Nov. 26-28.....—Chicago, Three-day 600-mile Reliability Race, Chicago Motor Club.

FOREIGN.

Shows.

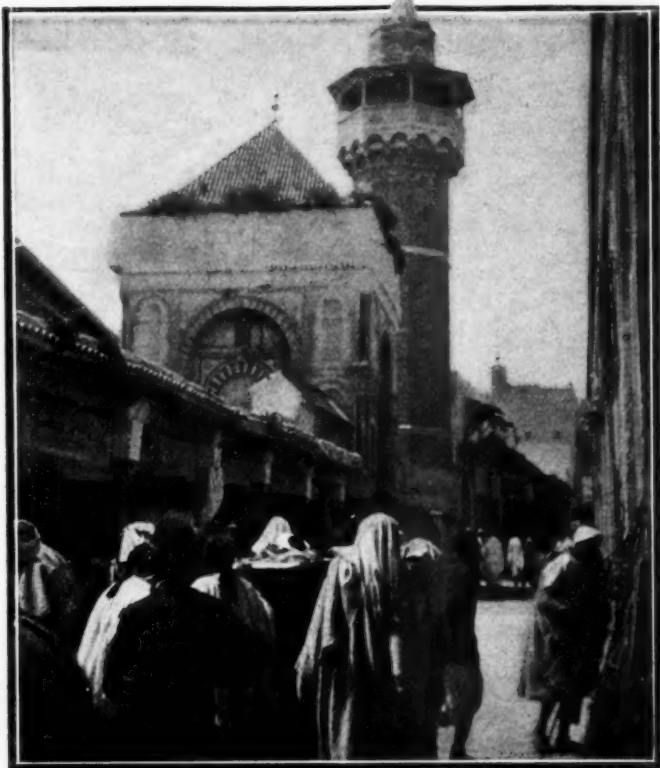
- Nov. 12-Dec. 1.....—Paris, Exposition Decennale de l'Automobile, Grand Palais, Esplanade des Invalides, Automobile Club of France.
- Nov. 22-30.....—London, Agricultural Hall, Stanley Show.
- Dec. 5-22.....—Berlin, Germany, Automobile Show.
- Dec. 21-Jan. 2.....—Brussels, Show, Palace of the Cinquantenaire.
- Jan. 18-Feb. 2, '08.....—Turin, Italy, Fifth International Automobile Exhibition, Palace of Fine Arts, Valentino Park, Automobile Club of Turin.
- Mar. 21-28.....—London, Agricultural Hall, Cordingley's Show.

Races, Hill-Climbs, Etc.

- Dec. 8.....—Paris, Straightaway Aeroplane Speed Test, auspices of "L'Auto."
- Dec. 13.....—Paris, Competition for Agricultural Automobiles, auspices of "L'Auto."
- May 12, 1908.....—Sicily, Targa Florio, Automobile Club of Italy.
- June 20-July 5.....—Grand Prix, Dieppe Circuit, Automobile Club of France. (Exact date to be announced.)
- August, 1908.....—France, Coupe de la Presse, Automobile Club of France. (Exact date to be announced.)

Autoing in Northern Africa:

PART III
TUNIS, CARTHAGE and EASTERN TUNISIA
By C. H. Jones



IN ONE OF THE PRINCIPAL STREETS OF TUNIS.

THE city of Tunis is less attractively located than Algiers. Low-lying on a deep inlet of the sea known as the Lake of Tunis, even its "casbah" or citadel, which stands on the highest land within its limits, is hardly distinguishable from the hovering mass of buildings when the city is viewed from a distance. Yet for the visitor from America or Europe it possesses more of interest. In the first place, it is less French and more Oriental. The Arab city within the old walls has wisely been left almost intact, while the foreign quarter has been built outside the walls, mostly on the made land redeemed from the swamp that formerly extended from the city walls to the water's edge of the "lake." In the second place, the native life and customs have been less interfered with. Equally effective in essentials, the French domination is less obvious and pervasive here than in Algiers. As soon as he steps from the hotel into the street, the visitor can feel no doubt that he is in the real East. In the passing throng, giving it its distinctive character, are Arabs and Barbères, Bedouins from the desert, negroes black as ebony and clothed in gorgeous colors, women swathed in white but with faces veiled in black (these are the Arab women), others in white silk and unveiled (these are Jewesses). If he enters the old Arab city he finds bazars (called "souks"), smaller but nearly as interesting as those of Constantinople or Cairo—the perfumers, the jewelers, the tailors, the carpet merchants, the shoemakers, the sellers of dry-goods, the silk-weavers, the blacksmiths, the brassware merchants, each trade in its own "souk," yet all grouped together in a wonderful tangle of intersecting alleys or arcades; the shops, about as large as a hall bedroom at home, but crowded with workers

and tradesmen. If he walks the narrow thoroughfares leading from the gates in the old city wall, he is jostled by a motley crowd that will remind him of the changes in a kaleidoscope.

In its history Tunis reaches back into the twilight of antiquity, and, unlike its more famous neighbor, Carthage, it has been continuously a more or less prosperous city ever since it was settled by the Phoenicians, about 860 B. C.

There are four garages, of which one is spacious and well equipped, and a still more spacious one is nearly completed. Tires and other usual auto supplies may be obtained at these garages at slightly enhanced prices, and by telegraphing almost anything may be had from Paris in four or five days. The usual price of gasoline is 60 centimes per liter, but it may be bought at 50 centimes, the same as in Algiers. In all respects Tunis is most attractive for a stay and as a center for automobile excursions, the first of which will pretty certainly be to Carthage.

Fêtes at Carthage, "the City That Is No More."

With all who are even superficially acquainted with history there is no name save Rome that wakes such an echo in the imagination as that of Carthage. And the fate that anciently befell the two rivals still persists. Rome remains, and promises to remain, the "Eternal City." "Carthage is no more." Every visitor to Tunis who learns that he is so near the site of Carthage is eager to go there. But disappointment awaits him. To the casual observation the only conspicuous object that now marks the site is the painfully new and modern-looking Cathedral of St. Louis, which surmounts the summit of the Byrsa, where stood the citadel of both Punic and Roman Carthage. Of the ancient mistress of the Mediterranean there are fewer and less striking remains than of many a fifth-rate city whose ruins still serve to remind us of the Roman dominion in Africa.

The site of Carthage—there is not even a village there now—is 16 kilometers from Tunis by an excellent macadamized road. From Tunis itself and all along the road the white mass of the Cathedral of St. Louis catches the eye, and on arriving the first impulse is to climb the hill on which it stands.

The best preserved of its ruins is the ancient Roman Theater, and here "a fête antique" took place on April 3 at which our party was fortunate enough to be present.

Some Seaside Resorts "Around the Lake."

As already explained, the city of Tunis is not situated on the sea, or even on the Gulf of Tunis, but on the inner curve of a nearly land-locked bay, known locally as El Bahira, or the Lake of Tunis. It is a very shallow body of water, through which the Canal of Tunis has been constructed to the entrance of the Gulf at La Goulette, thus making a seaport of Tunis. A pleasant morning or afternoon excursion may be made by circling the lake and visiting interesting places near its shores.

One afternoon about 2 o'clock we left Tunis by the Avenue de Paris and turning to the right just before reaching the Belvedere, the pretty park of Tunis skirted the northern shore of the lake to La Marsa (20 kilometers). La Marsa stands on the site of ancient Megara, which was part of Punic and Roman Carthage, but it is now simply a pretty seaside resort, with many villas set in gardens and the favorite residence of the present Bey of Tunis. About two miles beyond is Sidi-bou-Said, the summit of Cape Carthage and extending down the steep slope to the sea. Its houses are all whitewashed, and from sea or land it is perhaps the most conspicuous landmark near Tunis. The lighthouse here, built on a Roman foundation, towers 440 feet above the sea, and the tomb of the saint for whom the town is named is so venerated that it is an object of Mussulman pilgrimage from all parts of North Africa.

Returning to La Marsa from Sidi-bou-Said, we turned eastward and by a road passing the foot of the hill of Carthage soon reached and traversed the frequented seaside resorts of Khéredine and La Kram, containing a spacious casino and numerous detached villas that are occupied in summer by wealthy Tunisians. Next comes La Goulette, formerly the port of Tunis, but

deprived of its commercial importance by the construction of the ship canal and harbor of Tunis. Nearly every building in it was constructed with stones taken from the ruins of Carthage. Here we crossed the canal on a primitive looking ferryboat and proceeded over a sort of dyke or causeway 10 kilometers to Radès, situated between the Lake of Tunis and the sea and a favorite summer resort of the French residents of Tunis.

Some ten kilometers east of Radès by a rather rough road, situated directly on the shore of the Gulf of Tunis, is Hammam Lif, the most frequented bathing resort in Algeria or Tunisia. The sea bathing on a very fine sandy beach attracts summer visitors in large numbers, and the hot springs draw winter visitors. From Hammam Lif an excellent road, diverging to the left just where the road from Radès enters the town, leads in 16 kilometers direct to Tunis, which we reached about 6 P. M. The total distance was about 65 kilometers (40 1-2 miles).

A Peep at Bizerte, the Rival of Gib.

A whole day should be given to the excursion to Bizerte, and if the weather is favorable, and if the fields are carpeted as when we made it with the marvelous variety of spring wild flowers that abound in North Africa, the day will prove an enjoyable one.

There are two routes to Bizerte. For the direct and better one we left Tunis by the gate Bab Bou Saadoun, followed the tramway to the Bardo (3 kilometers), and there, at the fork of the road, took the one to the right. From the Bardo to the hamlet of La Sebalah (15 kilometers from Tunis) the road passes through olive plantations and then through a well cultivated but very sparsely populated region almost due northeast. At 30 kilometers the road climbs and then descends a long, low hill, notable as the site of ancient Utica, which was a flourishing Phœnician colony before Tunis and Carthage were founded, but of which the only vestiges that now remain are scarcely traceable ruins of the theater, amphitheater, and a Carthaginian palace. A large modern farm and a small Arab village occupy part of the site. Just beyond kilometer post 25, at the hamlet of Protville, the river Medjerda, the largest in Tunisia, is crossed on a stone bridge, the roadway of which is in very bad condition, threatening to tires.

As far as kilometer post 29 the road between Tunis and Bizerte is uneven—good in spots and bad for equal distances. Then it improves and is very good for the rest of the way to Bizerte. Eight kilometers beyond Utica, at kilometer post 38, the road forks. The straight road leads to Porto Farina, once the chief naval port of Tunis, now noted only for its extensive fisheries. A road thence leads up the coast to Bizerte. The left fork is the direct road to Bizerte, which by this route is 63 kilometers from Tunis.

Bizerte is, next to Toulon, the most important naval station of France in the Mediterranean. It was planned with a view to neutralizing the importance of Gibraltar, and has done so.

We were surprised to find at Bizerte a large and good hotel (the Grand), connected with which is a garage where gasoline may be had for 60 centimes per liter (48 cents a gallon). The new town, or foreign quarter, is well built in the modern French style, but the old Arab village is more interesting to the visitor. We passed through its narrow streets on our way to the Corniche Road, as the drive of 20 kilometers around Cape Bizerte is called. The drive borders the sea for most of the distance, and after it turns inland affords interesting rear and interior views of some of the powerful sea batteries.

The return journey to Tunis may be made via Mateur and Tebourka, but it is much longer (116 kilometers) and we could not learn that it offers anything of interest en route. We preferred to leave the Mateur route by a road that turns off to the left just beyond kilometer post number 8. This took us through Ferryville and almost completely encircled the Lake of Bizerte, enabling us to see what a spacious harbor it affords. We rejoined the direct route near kilometer post 41, and turning to the right, reached Tunis at sunset.

Bizerte is almost due north of Tunis. Zaghuan lies due south, at a distance of 52 kilometers by the most direct route via La Mohammédia. The road was in very bad condition when we made the excursion on April 20, and there is little of interest en route. La Mohammédia (14 kilometers), now a vast ruin or collection of ruins, was a country residence built by Ahmed Bey, containing accommodations for his entire court, with quarters for 15,000 soldiers, and surrounded by a fortified wall. On his death it was abandoned by his successor and the natives plundered and partly demolished it. Just beyond kilometer post 17 the road runs close beside the impressive ruins of the ancient Roman aqueduct that conveyed water from the mountains near Zaghuan to Carthage and Tunis, and crosses a stream on a stone bridge whose piers were those of the aqueduct.

Southward to Carthage's Water Source 1,900 Years Ago.

Zaghuan itself, standing on the site of a Roman town whose name is unknown and of which only a triumphal arch remains, is a dirty village of about 2,000 inhabitants, mostly Arabs, but surrounded by gardens of flowers and fruit trees. What makes it worth a visit is the great spring which gushes forth at the



MAP OF TUNIS SHOWING ROUTE TO THE GREAT DESERT.

foot of the Djebel (Mount) Zaghuan, about a mile and a half from the village. This spring supplied Carthage with water 1,900 years ago, as it now supplies modern Tunis and the towns near the site of Carthage.

The return journey to Tunis may be made via Sainte Marie-du-Zit and Cretéville, the route being somewhat longer (73 kilometers), but more picturesque, with steep ascents and descents through the mountains near Sainte Marie-du-Zit and a winding road along the valley of Mornag.

We made the excursion across Cape Bon to Nabeul one afternoon, starting about 2:30 P. M., but if we had had any correct idea of the distance we should assuredly have allowed ourselves more time. The misinformation on the strength of which we started affords a good illustration of the difficulties automobilists encounter here in the effort to obtain exact facts even about comparatively nearby places. Nothing helpful regarding distances could be found in the books, and when we asked at the hotel we were told that Nabeul was "about twice as far as Hammam Lif," through which we pass in going there. This would have made the distance to Nabeul 32 kilometers, and the total distance there and back 64 kilometers. We learned by experience that the distance to Nabeul is 79 kilometers and the round trip there and back 158 kilometers, a difference which might have cost us dear, for we started with insufficient gasoline for such a trip. Fortunately we found that the hotel at Nabeul

keeps a supply, which was not only salvation for us, but shows how great a change has recently occurred in this respect. Three years ago gasoline could be obtained in Tunisia and Algeria only in the half-dozen larger cities. Now it is found for sale even in a small town like Nabeul remote from any highway of travel, and at a price slightly less than that charged in Tunis.

The road to Nabeul is good all the way except a few kilometers where the roadmenders were getting ready for repairs. From Hammam Lif it runs directly across the base of Cape Bon, passing a few meager villages, of which Grombalia (37 kilometers from Tunis) is the most important. Just beyond kilometer post 60, after climbing a low hill, we came in sight of the sea—the Eastern Mediterranean that stretches away to the shores of Asia Minor. To the left, in the distance, nestling on the shore and gleaming white in strong sunlight, lay Hammamet, a pretty summer resort that is becoming popular with Tunisians. Turning sharply to the left at kilometer post 61, we skirted Hammamet without entering the town, and after a swift run of 11 kilometers reached Nabeul, the ancient Neapolis. Nabeul is noted for the native pottery made there and for the perfumes which are distilled from the roses, geraniums, jessamine and orange flowers that grow in the gardens by which the town is surrounded. The climate is exceptionally mild, and Nabeul is becoming known as a health resort for both summer and winter visitors.

Beyond Nabeul the road continues north and is good as far as Kourba, the ancient Colony Tulio. Farther north still are Menzel and Kelibia (ancient Clypea), and then comes Cape Bon, the northern tip of Africa. In Roman times this whole peninsula of Cape Bon was densely populated, and ruins abound everywhere. Some of these would no doubt reward excavation. Our excursion ended at Nabeul, and in spite of swift running darkness overtook us before we reached Tunis.

Remote Tunisian Roads Shame Those of America.

The excursion to Sousse, Sfax and Gabès is by far the most important and most interesting that can be made from Tunis. To do it justice requires from five to seven days, and the longer time may be spent profitably. Our party gave eight days to it in all, and made two separate attempts. The first time we went to Sousse and Kairouan and were driven back by a spell of bad weather that lasted two weeks. When the weather settled we went all the way to Gabès and back, making the trip in five days.

The road is the best leading out of Tunis; with the exception of about 15 kilometers, throughout the entire distance to Gabès (405 kilometers, 253 miles), it is excellent. In fact, one of the marvels of the trip is to find here in remote Africa, in a country for the most part sparsely populated, 250 miles of road far better than any similar length of road in the entire United States—a road upon which work is constantly going on and which is kept in better condition than the drives of Central Park.

As far as kilometer post 61, where the turn-off is made to Hammamet and Nabeul, the route is the same as the preceding. For 25 kilometers beyond the fork, and in fact nearly all the way to Sousse, the road runs close along the margin of the sea, through a country perfectly level and mostly devoted to farming. Eufidaville (96 miles from Tunis) is a flourishing European colony, interesting because it is the center of a property of 300,000 acres, a quarrel concerning which between a French company and the natives led to the French occupation of Tunisia.

Sousse (140 kilometers) is a very attractive little city, with several hotels in the European quarter, one of which (the Grand) is quite good, and a garage and repair shop where gasoline can be had at 60 centimes per liter.

Kairouan, the Sacred City on the Plain.

At the Arab village of M'Saken, 15 kilometers beyond Sousse, a road diverges to the right from the main highway and leads in 46 kilometers to Kairouan. The road is good for most of the distance, but in places extremely bad; and when we made the journey on April 13 it was at its worst, because of repairs in progress and because of a tropical storm which burst upon us



AVENUE JULES FERRY—ONE OF TUNIS' BEST STREETS.

on our way back to Sousse, converting a portion of the road into a soft, spongy swamp, well nigh impassable, and making of every depression in the roadbed a pool of muddy water.

Kairouan is one of the sacred cities of the Mohammedan world, and like Mecca is an object of pilgrimage to the faithful. As we approached it across the level plain it lifted in the air like a mirage, with minarets and domes defined against a murky sky-line, and its walls and buildings looking white and phantom-like under the cloudy heavens. It was founded in 670 by the conqueror and saint, Sidi Okba, whose tomb we had visited near Biskra, and the site selected is said to have been a dense forest infested with serpents and wild beasts, which were driven out by a miracle. It has remained until now almost exclusively a native city, with scarcely 200 foreign residents, and because of this it is peculiarly interesting. Another source of interest is that it has the finest mosques in Tunisia or Algeria, and these are the only mosques in Tunisia that can be visited by Christians or Jews.

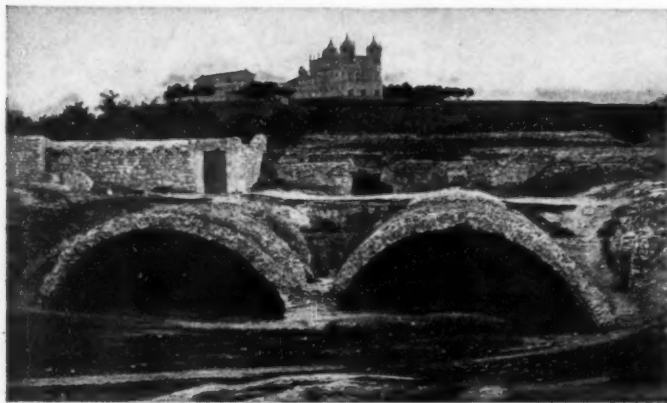
The "souks" or native shops offer little of interest after those of Tunis, but are wholly native. The Hotel Splendide, outside the walls, has a garage at which gasoline is sold at 70 centimes per liter (about 56 cents a gallon).

More First Century Ruins in Trip to Sfax and Gabès.

The road from Sousse to Sfax (130 kilometers) is excellent for automobiling and leads through one of the richest farming regions of Tunisia, where vast quantities of wheat are grown with the scant yield of about 8 bushels to the acre, and where extensive olive plantations are seen at frequent intervals. The only object of special interest en route is the Coliseum of El Djem (64 kilometers from Sousse), and that is of very great interest, for it is one of the finest Roman ruins in existence. El Djem is a squalid Arab village standing on the site of the



PERFORMANCE IN THE ANCIENT CARTHAGINIAN THEATER.



ANCIENT CISTERN AND MODERN CHURCH AT CARTHAGE.

ancient Roman city of Thysdrus, of which not a visible vestige remains save this wonderful amphitheater towering massive and solitary above the plain. The Coliseum dates from the time of the Emperor Gordian the Elder, whose reign began in 236 A. D. Its greater axis is 489 feet and its smaller 407 feet. Its circumference exceeds 1,200 feet, and it could seat 60,000 spectators. Its state of preservation is about the same as that of Rome's Coliseum, although it was used by the Arabs for centuries as a fortress and in later times as a quarry from which columns and blocks of stone were carried off for the building of bridges and houses. When the time comes for excavating the site of ancient Thysdrus it is probable that other interesting ruins will be found, but none to compare in majesty with this gigantic monument of a city that must have been both rich and populous to support such a place of amusement. Our Metropolitan Opera House could be set down inside its arena.

Sfax is another of the Phœnician cities that were established along this part of the Mediterranean coast in the eighth and ninth centuries B.C. By the Romans it was called Taparura, and this was its name until the Arab conquest in the eighth century A. D. Its modern name is said to be derived from the Arab word *fakons* (cucumber). Since the French occupation in 1881 it has grown rapidly and is now the second city of Tunisia in population and commercial importance. The old city, within the crenellated and bastioned walls, is still wholly Arab and on that account interesting. The French and European quarter has grown up outside the walls, around the new port. There are two fairly good hotels and a garage where gasoline is sold for 55 centimes per liter.

Here we were told that gasoline could not be obtained at Gabès, so we carried with us in the tonneau enough to make the round trip. We found, however, that the Grand Hotel de Gabès has it for sale at 80 centimes per liter (about 64 cents a gallon). It was explained to us that the high price is due to the fact that it must be brought by camel most of the distance from Sfax. There is no railroad between Sousse and Sfax. A ramshackle automobile omnibus makes the trip daily (fare 20 francs). From Sfax a narrow-gauge railroad has been constructed which runs alongside the Gabès road for 35 kilometers to Mahares, and then runs southwest to Gafsa. The nearest point to Gabès on this railroad is Graiba, 80 kilometers distant, and between this point and Gabès an automobile of similar type of those of the Sfax-Gabès line makes the round trip twice a week (fare each way 15 francs).

The road from Sfax to Gabès (135 kilometers) is excellent and runs most of the way close to the sea. There is nothing of interest en route, and the country traversed is singularly featureless and desolate. For about half the distance when we traveled it on April 28 there were vast fields of stunted grain; then a grazing country thinly sprinkled with innutritious-looking grass, and the last 50 kilometers were in the Desert of Sahara, which here has none of the interesting features of the portion of it traversed in going to Biskra.

If one has been to Biskra or intends going there, this trip from Sfax to Gabès and return is not worth the trouble. But if Biskra is not on the program, then this journey is worth making simply to have the experience of traversing a wide expanse of desert and emerging from it into the delicious cool green of an oasis. And the oasis of Gabès is, on the whole, the most beautiful we had seen.

The Novelty of Reposing in a Desert Oasis.

The weather had changed before we left Tunis, and the seasonable warmth which there had succeeded the persistent cold and rain became intolerable heat in the desert. The journey to Gabès one afternoon and the return next day to Sfax was made in a temperature that, in the arid, treeless, and shadeless desert, must have exceeded 120 degrees, and this was aggravated by a sirocco or hot wind from the south. The oppressive heat deterred us from going to Madenine, 80 kilometers beyond Gabès, to which point the national route extends. In ordinary weather that extension of the trip is well worth while, for the opportunity it affords of seeing the curious habitations of the Troglodytes or cave dwellers. Their caves are dug out of the sides of a cliff, and comprise as many as five different floors or stories. In some cases there is an outside staircase, but these are usually absent, and the occupants of the upper floors climb up to them by the aid of projecting stones.

As we were prevented by the heat from going to Madenine, Gabès was the southernmost point of our tour in Algeria and Tunisia. It is about 150 kilometers farther south than Biskra and nearly as far south as Touggourt. Four days after our return to Tunis, namely, on May 3, our automobile was hoisted to the deck of the Compagnie Transatlantique steamer *Ville de Naples*, and on the morning of May 5 we landed again in Marseilles. We found it more expensive to get out of Africa than to get in. The cost of transporting the automobile from Tunis to Marseilles, including embarkation and landing fees, was 264 francs (\$52.80). From the time of our landing in Algiers to our embarkation at Tunis we had motored 3,242 kilometers or 2,027 miles, of which 1,280 kilometers were in Algeria and 1,962 in Tunisia.

In fairness to those who may be induced by what has been written in these articles to undertake a similar trip a word should be said regarding the steamer service between North Africa and European ports. It is very bad. Not only are the steamers small and nearly all of them old, but a worse drawback is found in the methods of management. The rule which is practically universal on other sea routes, that if you buy two first-class tickets you are entitled to a cabin or stateroom, is not recognized on these lines. Nor is anything gained by registering in advance. For the steamer by which we came from Tunis to Marseilles we were registered three weeks before the date of sailing, and our names were first on the list, yet the ladies of our party were jammed into staterooms each with two other women occupants, and the men were treated in like fashion. Even so small attention as would be required to assign the first applicants to lower berths was not given to the matter. The whole efforts of the company's agents appeared to be concentrated upon the program of filling each separate berth in the steamer with a paying passenger, and provided that was accomplished nothing else mattered. The question of the passengers' comfort and convenience appeared to receive absolutely no consideration. There is less excuse for this because the rates of passage are high; much higher relatively than on the palatial steamers of the Havre-New York line. However attractive motoring in North Africa might be found to be, either as read of in a descriptive account or as a personal experience, it can never become really popular with automobilists until the steamer service to and fro is greatly improved.

A Summing Up of Advantages and Drawbacks.

What the writer experienced in the important matter of weather has already been set forth in these articles. Making all due allowance for an exceptional season (and we were as-

sured by everybody that it was exceptional), it is nevertheless unquestionably true that North Africa should be shunned in winter by the automobilist for the same reason that New England is shunned—because it will subject him to great discomfort and will offer few compensations. The American enthusiast for whom the usual motoring season does not suffice would better seek his winter recreation in France. He will find the roads there in pretty much the same condition as in Algeria and the hotels far more comfortable. Outside of Algiers and Tunis no hotels in North Africa possess any facilities for warming their interiors, and even in spring the rooms—including the sitting and dining rooms—are penetratingly cold. The only time to motor for pleasure in Algeria and Tunis is in March and April (from the 15th of March to the end of April), or in October and November. If spring is chosen the entry should be made at Tunis and the Tunisian excursions made before proceeding to Algeria; the tour which the writer has described should be taken in reverse. The reason for this is that the climate of level Tunisia is milder than that of mountainous Algeria. If the fall

Algeria and Tunis Safer than East-side New York.

When the writer mentioned in New York his intention of venturing upon a motor trip in Algeria, solicitous friends, with visions of Raisuli in their mind's eye, urged that the men of our party provide themselves with serviceable revolvers. We did so, and as a matter of fact we had about as much use for them as we would have in a drive down Fifth avenue. The natives were everywhere peaceable, orderly, and even friendly; actuated by a mild curiosity concerning ourselves and the car; watchful of all we did because of its strangeness to them; obliging with information when they could be made to understand what we wanted to know; and always ready to lend a helping hand when assistance was needed. A kindlier people than the Arabs it would be difficult to find anywhere, and even in the country of the historically fierce Kabyles we did not on a single occasion experience a discourtesy. The writer would rather motor with a party of ladies over any portion of the route he had described than down one of the East Side avenues in New York City on a Sunday afternoon. In this connection



[ARAB WOMAN OF BETTER CLASS.



BEDOUIN FAMILY OF FOUR.



RICH JEWISH WOMAN OF TUNIS.

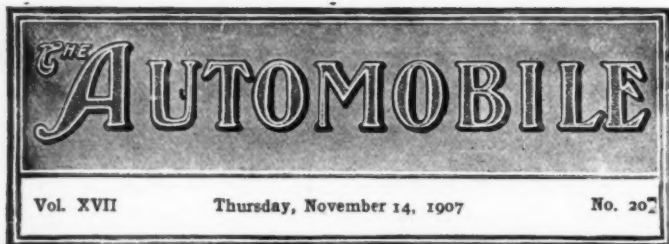
is chosen, then the tour as the writer has outlined it could hardly be improved upon from the climatic point of view.

The roads have also been described with the minuteness that automobilists are apt to desire. In summary it may be said of them that, as a whole, they are surprisingly and remarkably good—far better than could reasonably be expected in a portion of the world so remote from countries that are supposed to have a monopoly of civilization. In all accessible portions of Algeria and Tunisia the writer traveled more than 2,000 miles. In the entire United States there are not half as many miles of macadamized road that would bear comparison with these in point of engineering and up-keep. The only important section of road traversed that could fairly be described as bad was that across the Desert of Sahara, between El Kantara and Biskra, and in another two years one of the best roads in Africa will link those two places.

At present there are only four cities in Algeria and Tunisia where tires and other automobile requisites can be found. These are Algiers, Constantine, Bone, and Tunis. As recently as three years ago there were few places outside of these four cities where gasoline was kept for sale. Now it can be found in almost all towns of any size along the usual routes of travel. It is expensive, its price ranging from 50 centimes per liter in Algiers and Tunis (about 40 cents a gallon) to a franc per liter at Biskra (about 80 cents a gallon). In the interior the price will no doubt gradually fall as the demand increases, but on account of taxes it is not likely to fall below 50 or 60 centimes per liter anywhere.

one point should be emphasized. It is indispensable that on such a trip at least one member of the party shall be able to speak French fluently. A surprisingly large number of the natives, even in the remote interior, understand French, but in no other language save Arabic or Berber is it possible to communicate with them. Of English or any other European language they know not a word.

Is it worth while? is a question which has already been put to the writer many times and which it is difficult to answer categorically. For any motorist with whom comfort is a primary consideration, it is not worth while. Until one has motored over most of England, Scotland, substantially all of France, a large part of Germany, the Austrian Tyrol, Holland, Northern Italy, and such portions of Switzerland as can be visited, it would be wiser to postpone the tour of North Africa. On the other hand, if one has the sporting instinct, or the craving for alien scenes and strange peoples, then it is worth while. As the writer recalls the cost, the trouble of getting there and of getting away, the perplexities and anxieties of the trip, and the deep disappointment with the climate, he is inclined to say "no." But when in the reminiscence he recalls the strange land and scenes, the undying fascination of Oriental people, the wonder and the mystery of the desert, the gorgeous colors of the fervid East, the sense of remoteness from all the habitudes of ordinary life, he is inclined to content himself with saying that those who like what he has described will find an automobile trip through the classical and picturesque countries of Algeria and Tunisia exactly what they like and a great deal of it.



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What Scientific Investigation Has Accomplished.

Few automobilists realize the extreme crudity of the electrical apparatus which the automobile designer found was the only thing to be had but a comparatively few years ago. True, electrical ignition was far from being new, and its component essentials, such as the spark plug, the make-and-break ignitor, the timer, and the induction coil, had all been used to a greater or less extent in stationary and marine practice, but that they were about as far from being up to the requirements of automobile service as they possibly could be, and still work, will be the recollection of every autoist whose experience extends back that far. The induction coils of those days could not be adjusted to take less than two or three amperes, timers were both mechanically and electrically defective, and the same thing applied to the plugs, so that in combination they rapidly wasted two-thirds of the output of the battery, and, generally, the sins of the entire ignition system were laid at the door of the latter.

The story of the development that has taken place in the interim is a long one, and each one of the advances, simple as it may now seem in retrospect, not only required considerable study to bring about, but also much painstaking investigation to fathom, for the manner in which improvement was to be made was frequently a sealed book. There were so many unsuspected causes of failure that nothing short of the constant application and study that has been given the subject during the past few years could ever have sufficed to bring about the tremendous advance

that has been made, and for the accomplishment of which the manufacturers of ignition accessories have been almost altogether responsible. The hit-and-miss methods that had characterized the early investigations of pioneer automobile builders were given up in favor of the more exacting and resultful study of the laboratory and the outcome is a matter of common knowledge.



Is Toll-paying a Solution of the Road Problem?

Judging from the frequency with which special automobile toll-road projects spring up in various parts of the country and the tenacity with which the idea that such roads would prove a profitable investment is entertained, it would seem as if there were more in the subject than appears at first sight. On principle, the average autoist strenuously objects to being taxed for the use of the road to a greater extent than others who enjoy the same privilege, and with reason, but whether he would so object to paying a nominal sum to make use of a highway constructed and maintained especially for his benefit is another matter. Doubtless he would be only too glad to be able to take advantage of such an opportunity, and be quite willing to contribute toward the support of such a road in sufficient numbers to make it economically possible. The Long Island Motor Parkway is an illustration in point, and it will doubtless form a model for a great many others of similar nature when completed.

This brings to light the question as to whether the automobile toll-road may not eventually prove to be the stepping stone to that vastly improved state of affairs that is universally hoped for—a time when not alone all roads will be considerably more deserving of the name, but when there shall no longer be any prejudice on the part of one class of road users against another, particularly when that other is representative of progress. It goes without saying that ultimately nine-tenths of all road traffic will consist of automobiles, and tolls would then be abolished as a natural sequence. The plan of making those responsible for the improvement pay for it is somewhat anomalous, but unfortunately that is frequently the only manner in which such improvements can be brought about expeditiously.



Use of Objectionable Signaling Devices.

Rising above the multitudinous and indescribable noises of city traffic, which the urban dweller has come to endure as a matter of course, his ears are now assailed by weird groans and shrieks, or grotesque reproductions of familiar and simple airs. In Paris a curb has been put on this childish tendency to utilize the automobile as a means of scaring horses and pedestrians by making outlandish noises, and it is time that similar steps were taken in the larger cities in this country. There is no limit to the ingenuity of the inventor of these juvenile devices on a large scale, and, like a boy with a new whistle, many a driver takes fiendish delight in utilizing them to the utmost.

In the French capital the employment of such objectionable means of warning pedestrians and other traffic is placed under the ban altogether, and the weird shriek that the driver of a rapidly approaching car takes pleasure in producing in New York City would there subject him to immediate arrest. Parisian ears are no more sensitive than those of the dwellers in American cities, and the example of the French municipality in thus restraining what is nothing more or less than a childish practice is a commendable one that could well be followed here. Long-range warnings may be more or less of a necessity on country roads, but they certainly have no place in city driving, except when used for legitimate ends, as in the case of the fire department's cars. While the majority of autoists are common-sense individuals who do not indulge in the practice, there are sufficient numbers who thus make themselves offensive, to call attention to the matter, and it is to be hoped they will soon be suppressed.

A. A. A. RE-ELECTS HOTCHKISS TO THE PRESIDENCY

PERFECTLY content to leave in power an administration which, since February last, had increased the membership total from 8,000 to over 19,000, the Board of Directors of the American Automobile Association, made up of the chosen representatives of the various State bodies, on Friday last, reelected William H. Hotchkiss to the presidency; Lewis R. Speare, first vice-president; Asa Paine, second vice-president; Ira M. Cobe, third vice-president; George E. Farrington, treasurer, and F. H. Elliott, secretary.

The meeting was held at the association's headquarters, 437 Fifth avenue, and was attended by directors from Massachusetts, Rhode Island, Connecticut, New York, New Jersey, Pennsylvania, District of Columbia, Ohio, Indiana, Illinois, Minnesota, and Florida. The greater part of the day was taken up with the reading of the annual reports, which were both exhaustive and interesting, and told of the great progress of the organization during the past nine months. The constitution having been changed so as to make the annual election come in November instead of January, and realizing that the present administration had not an opportunity of perpetuating its policies, there was no dissent against continuing the Hotchkiss-Elliott régime.

These chairmen have been asked to continue in office: Robert P. Hooper, Good Roads; Jefferson deMont Thompson, Racing; Charles Thaddeus Terry, Legislative; and F. B. Hower, Touring. A technical board and also a publications board will be added to the list of national committees. The executive committee will be increased to seventeen, including the chairmen of the boards.

Herewith are extracts from the various reports:

From the Report of President W. H. Hotchkiss.

Legislation.—Comparatively few of the State legislatures meet this winter, but in those few efforts will be made either to revise existing laws, where the same are prejudiced or imperfect, or to pass the so-called uniform motor vehicle law where no laws now exist. Plans have already been made to this end, and the work can safely be left in the hands to which it has been committed. The legislative board will also make a determined effort to pass the Federal registration bill. Present indications point to the success of such efforts.

Good Roads.—The good roads movement is now national in its character. Whether much can be accomplished through congressional aid, I very much doubt. But our good roads board, through its State committees, has been able, and in the coming year ought to be able to accomplish much toward awakening interest in the subject and bringing motorists out in the open for it. After all, however, the success of this movement depends more upon the farmer and the grange organizations than upon us, and all our board can do is to assist in creating interest and co-operate with other bodies which are working to the same end.

Racing.—The characteristic feature of the motor racing situation of the past year was the large number of accidents incident to races on circular tracks. That the public demands the abolition, or, at least, the regulation of these races in such a way as to avoid accidents, will be conceded by everyone. The whole subject has, therefore, been turned over to a special committee on sanctions, which has already made certain suggestions looking to a union of this association with the various national bodies of manufacturers and dealers on some policy that will meet the views of the public.

There should, of course, be a Vanderbilt cup race next year, as well as a contest or contests between stock touring cars. Your executive committee already has under consideration several plans whereby both of these contests can be assured.

Co-operation.—A meeting recently held in New York seems to promise a better understanding between the association and the national bodies of manufacturers. These bodies have many interests in common. They have worked together too little in the past. If present plans are carried out, a basis for united action on all matters of common interest will be established, and much good cannot fail to inure to the association and its members.

From Report of Chairman C. T. Terry, Legislative Board.

From its organization, your committee has considered of paramount importance in its work the enactment of a Federal law regulating the registration and identification of motor vehicles, and concurrently with that the enactment in the various States of the

Union of a uniform State motor vehicle law, covering not only the subject of registration and identification for the particular State in which such a bill should be enacted, but also all the other matters of regulation of motor vehicles which could not, at this time, at least, be incorporated in a Federal statute. To this end, as you are aware, your committee forthwith, upon its creation, began working upon the construction of a Federal automobile law and upon a uniform State motor vehicle act. The proposed fields of these two proposed statutes are entirely different, but they overlap at one point, namely, in the matter of registration and identification, and, of course, the purpose of the two bills in general is identical in this, that they both seek to obviate the very distressing and, as we think, unnecessary and unfair divergence between the provisions of law to which one may be subjected in interstate automobile travel.

During the coming winter your board will bend its energies to the enactment of these two bills, and urgently requests the active co-operation of the members of your board and all the influence which they can bring to bear to effect the purpose in hand, and to that end especially seek to acquaint the members of Congress



GOVERNOR HUGHES AND WILLIAM H. HOTCHKISS.

During the recent visit to Buffalo of the Governor of the State of New York he was the guest of William H. Hotchkiss, president of the American Automobile Association, and it naturally followed that the Thomas-Flyer of Mr. Hotchkiss was well employed, with its owner at the wheel.

throughout the country with the salient features of the proposed Federal bill, and to secure the support of the bill by such congressmen.

From Report of Chairman R. P. Hooper, Good Roads Board.

Prior to the present year, the work of this board has been, of necessity, desultory. Conditions—the newness of the road problem, the difference from State to State in laws and methods, and the relatively small number of the association's State bodies—made productive work all but impossible. Early in 1907, however, the board was so organized as to properly perform its functions. This was accomplished by the appointment of State representatives, who, in turn, became the chairmen of State good roads committees, in the States where clubs have been or are about to be organized into State associations.

The good roads movement in the United States practically began with the introduction of the rubber tire, but active work on the main highways stretching through the States is coincident with the general use of the automobile. Since that time this work has progressed so rapidly that to-day it is of national importance. In its infancy it was easily handled by a few enthusiastic men, resident in the large cities, but, as the movement grew, it was quickly apparent that large things toward good roads could be accom-

plished only by a unity of associations in the various States, capained by a national association representative of all. No organization in the country is more interested in or better equipped for this work than the American Automobile Association. A movement is now on foot to centralize the activities of the different associations interested in good roads in a national organization, headed by the National Grange, and, acting under direction from the association's board of directors, the Good Roads Board is co-operating in such movement, and will recommend that the A. A. A. join such National Good Roads Association.

From Report of Chairman F. B. Hower, Touring Board.

It must be remembered that, until the present year, work of this board consisted only of the management of the annual tour, but now all is different. Our energetic and busy president laid out a line of work that has kept the office of the Touring Board hustling. General information, beneficial to tourists, has been pouring into the office from all sections of the country, and this information finally became so bulky that we found it necessary to devise some system for handling it. Large cabinets were built and are now in place. On cardboard, properly indexed, all routes, maps and information are transferred, and we are thus enabled to find immediately information asked for. It has been remarked that we should be able to furnish as reliable touring information as that supplied by the Automobile Club of Great Britain and Ireland. That criticism might hold true if this country did not cover vastly more territory than Great Britain.

The board so far this year has been of no expense to the association, and the annual tour resulted in a balance of \$2,020.10.

During the coming year special attention should be paid to hotel rates, garage rates, and data on improved roads. The automobilist seems to be a common prey to hotel proprietors and owners of garages, and the sooner this matter can be governed the better, and, with this object in view, the association should make an earnest effort to control the situation. This, we think, could be done to a great extent by correspondence. When the different hotels and

garages understand that this association numbers twenty thousand automobilists, and that they are kept posted on rates, its members will receive more courteous treatment.

In Report of Chairman J. D. Thompson, Racing Board.

Chairman Thompson recites the history of the conscientious and industrious efforts of the Racing Board to hold a 1907 race for the Vanderbilt Cup, telling why it was impossible to complete the Long Island Motor Parkway, and explaining why the efforts to hold the event in other States were either fruitless or unexpectedly interfered with. In conclusion, the chairman comments: "It is most unfortunate that the United States, which now leads the world in the manufacture of automobiles, should be the most backward in encouraging the industry, most reluctant to improve roads, and absolutely indifferent to our appeals for protecting a course on which to hold an international road race." Reference is made to the assistance given by the governments of France, Germany, Great Britain, Italy and Belgium in the holding of the annual automobile contests.

From the Report of Secretary F. H. Elliott.

The present membership of the A. A. A. includes 16 affiliated State associations, containing 120 clubs, with a total membership of 17,550; 15 unfederated clubs, with a membership of 1,035; and 621 individual members and three life members—a grand total of 19,209 on November 1. According to the association records on October 1, 1906, there were five State associations and 70 clubs, with an approximate membership of 8,857. There was practically no increase in membership between October 1 and February 1 when the new administration took office. The increase in the past nine months is 10,352 members.

NEW YORK STATE BODY TO CONSIDER LEGISLATION

THE quarterly meeting of the New York State Automobile Association of the A. A. A. was held Friday, November 8, at A. A. A. headquarters in New York City, President Oliver A. Quayle presiding, with Secretary C. D. Hakes in attendance as usual. Directors were present from the Automobile Club of America, Automobile Club of Buffalo, Rochester Automobile Club, Olean Automobile Club, Albany Automobile Club, Schenectady Automobile Club, Long Island Automobile Club, and Richmond County Automobile Club. The present membership of the State association is over 5,000 and contains 31 clubs.

It was decided to appoint a special committee to consider

the matter of legislation, the president being empowered to make appointments at an early date. This committee will report its recommendations to the Board of Directors previous to the convening of the next session of the New York State Legislature.

The State association decided to issue a Year Book and to supply a copy to each member of every club in the association, as well as to the individual members.

The good roads tour, which will be participated in by prominent members of the New York State Legislature, will take place during the present month.

PENNSYLVANIA FEDERATION VERY ACTIVE.

PHILADELPHIA, Nov. 11.—A meeting of the executive committee of the Pennsylvania Motor Federation, composed of the officers and chairmen of the several standing committees, was held at the automobile Club of Philadelphia, November 6.

The treasurer's report showed a healthy financial condition, the membership now exceeding 1,800. The Bangor Automobile Club, with a membership of 48, was admitted to membership, and a notification was received from the Motor Club of Harrisburg that its formal application would be forwarded.

Reports received from the legislative and good roads committees showed encouraging activity on their part. Many of the clubs throughout the State have actively taken up the work of inducing, or, if persuasion fails, of compelling road supervisors to observe too much neglected provisions of the road laws of Pennsylvania, the first requiring the erection and maintenance of finger signs at all cross roads, and the other that once a month during the summer all loose stones must be removed from township roads.

As the legislature of Pennsylvania does not meet until the fall of 1908, little can be done by the Legislative Committee.

OHIO ASSOCIATION WANTS NEW LAW.

CLEVELAND, Nov. 11.—The highways committee of the Ohio State Automobile Association met in Cleveland recently and discussed a plan for introducing automobile legislation before the coming session of the Ohio legislature this winter. There is a growing desire among the majority of automobilists for a State license law requiring the issuing of all car numbers and licenses by the State, as is done in other States. It is the aim to have the fees and fines from the violations of the State automobile laws go to the State road fund, which has been entirely inadequate heretofore to accomplish much good. The automobilists of this State are not only becoming disgruntled at the lack of good roads work on the part of the State, but the system which allows villages and towns to make their own speed ordinances and levy tribute for alleged violations of unknown regulations is one of the most discouraging features of touring in this State.

The Ohio State Automobile Association has been making good gains in membership during the past few months, and it is believed that it is now strong enough to make an effective campaign during the coming session of the legislature.



ROBERT ESNAULT-PELTERIE'S ORIGINAL BIRD-LIKE FLYING MACHINE SUCCESSFUL IN SKIMMING OVER GROUND.

FARMAN DESCRIBES CIRCLE WITH AEROPLANE

PARIS, Nov. 11.—Skeptics who insinuated that aeroplane flights were nothing more than jumps are effectively silenced by the latest performance of Henry Farman and his aeroplane built by the Voisin Frères. Farman has so often flown over the military ground at Issy-les-Moulineaux in its greatest length for anyone to doubt his ability to fly in a straight line.

On Saturday afternoon Farman made the most brilliant demonstration of the season by flying a kilometer in a circle. Starting from the lower end of the ground near the river, the machine ran a few yards on its four wheels, then gradually rose into the air. It was obvious that Farman had complete control of his heavier-than-air flyer, for under the influence of the rudder it was gradually brought round with but a slight heeling towards the ground. At the top of the field the turning movement was completed, and, the nose of the machine towards the starting point, a straight run was made for home. The kilometer circle had been covered for the first time in 1:14.

A wave of enthusiasm spread over the ground as Farman descended from his machine, the spectators realizing that the circular flight was a complete triumph for the heavier-than-air theory. Ernest Archdeacon, who with M. Deutsch has put up a prize of \$10,000 for the first flight of one kilometer in a closed circle, rushed forward to congratulate Farman on his success. Although the aeronaut will not immediately pocket the 50,000 francs as the result of his flight, it is unanimously admitted that he fulfilled all practical conditions and that the performance can be repeated at any time. The regulations for the Deutsche-Archdeacon prize declare that notice of an attempted flight must be given the Aero Club of France several hours in advance, that the flight must be observed by a deputation and that the distance must be officially measured. Henry Farman had given no notice of his intention to try for the prize, his afternoon's work being merely an ordinary trial spin; thus he is not entitled to the cash.

The world's most successful aeroplanist has never paid much heed to official records, his most important flights having all been done in private practice spins visible to the world. In conversation recently, he declared that the most successful feature of the machine, in his opinion, was that in every case he had been able to come to earth without any breakage. "Even now," said Farman, "leaving the ground is not an easy matter, and flying is much more difficult. In all flights up to the present I either rise too high, and my motor is not able to do the work of lifting a

machine weighing over one thousand pounds, or a wrong movement is given to the equilibrator and I am brought to the ground. A tremendous amount of thought is involved in even a short flight, for I have to look after the rudder at the rear, the equilibrator, the ignition, throttle, gasoline and water pressure, besides keeping an eye on the crowd."

Another Aeroplane of Which Much Is Expected.

Public interest has been centered on the aeroplane of M. Esnault-Pelterie, recently successful in covering a distance of more than one hundred yards on the inventor's own grounds near Versailles. The bird-shaped machine has a central body carrying the motor driving a four-blade propeller forward, and a couple of wings, each one being hinged to the body and designed to pivot independently. The rear plane, forming a tail, is also arranged to be either raised or lowered through the mechanism of two levers. The motor is also a special design by Robert Esnault-Pelterie, and comprises four cylinders staggered round a circular crankcase. It develops 22 horsepower. Total weight of the machine is 500 pounds.

SKY PILOT BRIGADE FOR BOSTONIANS.

BOSTON, MASS., Nov. 12.—New England will soon learn to fly, unless the plans of Charles J. Glidden and the handful of enthusiasts associated with him go seriously astray. At the Hotel Touraine, this week the New England Aero Club was formally ushered into existence under the care of Charles J. Glidden, George E. McQuesten and Alfred R. Shrigley, all prominent members of the Massachusetts Automobile Club. A further meeting was arranged for November 21, which is the 204th anniversary of the first balloon ascension in New England. The new club, which will occupy itself more with the sporting side than the scientific features of aeronautics, hopes to establish a permanent ascension station.

BELL FLYING MACHINE TRIALS SOON.

HALIFAX, N. S., Nov. 11.—Professor Alexander Graham Bell expects to start the preliminary tests of a new airship in a few days. Initial trials will be made by towing the machine without operator or motor, their weight being provided for by ballast. When these are successful, an operator will be allowed to take his place in the flying machine.

SUCCESSFUL TESTS WITH DENATURED ALCOHOL.

During the past week at the New York School of Automobile Engineers, 146 West Fifty-sixth street, New York City, there have been held some unusually successful tests with denatured alcohol as a fuel. Roger B. Whitman, technical director of the school, and his assistant, Julius C. Liebhardt, have been investigating the matter for some time and their experiments have proved so successful that a general invitation was issued to those interested to call at the school during the week of the Garden show. The fuel employed was commercial 94 per cent. alcohol mixed with 10 per cent. benzine and 2 per cent. wood alcohol, according to the government formula, and cost 30 cents per gallon. Apart from the fact that the carbureter was raised to the level of the inlet valves and the intake manifold made as short as possible, no special preparations were made. The carbureter was a stock Schebler of the 1907 pattern and the fuel was fed by gravity. In an old two-cylinder, 5-horsepower Daimler engine of the automatic inlet-valve type, which had been presented to the school by the makers merely as an alternative to throwing it on the scrap heap, the alcohol fuel permitted of instantaneous starting with everything cold, and although the compression was only 45 pounds, the old motor showed a brake output greater than its original rating. The consumption was naturally greater than with gasoline, but neither the facility of starting nor the power developed could be improved upon, and, according to Mr. Liebhardt, it has been found possible to reduce the consumption to as low as 1.4 pints of denatured alcohol per horsepower hour.

The second test was even more interesting and consisted of starting a four-cylinder Mercedes motor of the pattern of 1903, equipped only with a low-tension magneto for ignition, on the same fuel. Flooding the carbureter in a manner that would prevent starting on gasoline owing to the richness of the mixture, and giving the motor five or six brisk turns in order to accelerate the magneto, never failed to produce a start with everything dead cold. While running, the entire inlet manifold drops in temperature until it practically reaches the freezing point, owing to the rapid evaporation of the alcohol. It is the intention of the school in the near future to run one of its instruction cars on alcohol altogether, and the data thus obtainable should prove of interest. Joseph Tracy, whose experiments with alcohol last January will be recalled, was an interested visitor, but preferred not to commit himself to any opinion regarding the unusually successful outcome of the experiments, choosing to take the position of an observer only on this occasion.

AN INTERPRETATION OF THE INDIANA LAW.

INDIANAPOLIS, IND., NOV. 11.—The Indiana Supreme Court last week held that the recently enacted automobile law requiring automobile drivers to stop on signal from occupants of a buggy, even if the signal is not given by the driver, is valid.

For several months the case, brought from the De Kalb County Circuit Court, has been waiting a decision from the upper court, and in the meantime much controversy as to its legality has been aroused. An affidavit was originally filed against Samuel Goodwin by Josie and Rose Case, but it was quashed on the plea that the signal to stop had not been given by the driver of the horse.

"Driving in its popular sense," declared Judge Hadley in his decision, "means more than mere managing or directing a horse. It has, at least, a dual signification. When it is said that a party goes out 'driving' or 'boating' it is not usually understood that each member of the party performs the physical act of driving the horse, or of rowing the boat. . . . Even a strict construction would require us to hold that any occupant of the vehicle may give the signal."

This is the first time that the law has ever been tested in the State, authorities fearing it would not hold good in the courts. It is probable that from now on special effort will be made to enforce it.

TEMPORARY RECEIVER FOR ROYAL COMPANY.

CLEVELAND, NOV. 13.—The Superior Savings and Trust Company was yesterday afternoon appointed receiver by the United States Circuit Court for the Royal Motor Company, of this city, on proceedings brought by E. W. Cottrell, of Detroit, and W. K. Cochrane, of Chicago, stockholders and creditors. The action was brought to tide over embarrassment due to the money stringency.

The company is four years old, and recently moved into a large new plant, where it employed 400 men. Its business has increased in three years from \$90,000 to \$1,500,000. President Shurmer of the company says that the corporation is abundantly solvent and that the recent financial statement showed assets of \$650,000 in excess of liabilities. Large contracts on hand for next season necessitated heavy loans, and recent calls make it impossible for the company to meet maturing obligations. F. A. Scott, treasurer of the bank mentioned above, which has been appointed receiver, says there is no reason for alarm as to the outcome, as assets appear to be good, and the embarrassment will be only temporary.

CONDITION OF POPE AFFAIRS AT TOLEDO.

TOLEDO, O., NOV. 10.—George A. Yule, of Kenosha, Wis., has been appointed as an additional receiver to serve with A. L. Pope in the settlement of the affairs of the Pope Motor Car Company. The appointment was made on the petition of certain creditors, and Mr. Yule is now in this city for the purpose of making an inventory of the assets of the local plant.

In this connection announcement has just been made of a probable sale of the Toledo plant to a number of New York men, and A. E. Schaaf, general manager of the plant, is now in that city in the interests of the sale. Speaking of the sale, Mr. Yule said that had it not been for the financial flurry of a few days ago the sale would in all probability have been consummated prior to this, but that a final sale is anticipated shortly.

While Mr. Yule will not confirm the story, it is said on good authority that the prospective purchasers plan to spend several hundred thousand dollars in enlarging the plant and in making it one of the finest and most complete automobile factories in the United States.

A. E. Schaaf Has Been Requested to Resign.

TOLEDO, O., NOV. 11.—A despatch to the New York Times contains the following information: It was learned to-day that Albert E. Schaaf, who has been manager of the Toledo factory of the Pope Motor Car Company for a number of years, has been requested to resign by Albert L. Pope, one of the receivers of all the Pope factories. Harold Pope is now in charge.

Schaaf's management of the plant, so far as known, has been entirely satisfactory, yet the receiver has informed him that he is no longer wanted in a managerial capacity by the Papes. As George Yule, of Kenosha, who was recently appointed a co-receiver of the Pope factories by the United States courts in a number of districts, was not consulted as to the resignation of Schaaf, and therefore was not accorded an opportunity of either confirming or refusing to concur in it, there are likely to be difficulties before the matter is settled. Schaaf will vigorously contest the discharge.

EDWARDS TO HEAD LONG ISLAND A. C.

BROOKLYN, N. Y., NOV. 11.—Charles Jerome Edwards, the well-known automobilist and aeronaut, has been nominated for the office of president for the coming year, by the nominating committee of the Long Island Automobile Club. Mr. Edwards is an autoist of considerable experience and well liked, so that the nomination met with general approval on the part of the members. Owing to the progressive policy of the club, its membership is rapidly increasing, the interesting investigations and reports of the technical and other committees being largely responsible.

SOME FACTS CONCERNING FORTHCOMING CHICAGO SHOW

CHICAGO, Nov. 11.—In keeping with its reputation for doing things on a big scale, Chicago is to have the biggest automobile show of the year, and the only national show, as the Windy City is the only place in which the makers of the opposing camps come together to exhibit their cars under the same roof. As compared with the combined total of 110 exhibitors of complete cars at the two recent New York shows, the Chicago list already shows a total of 117, and nothing but a lack of space prevents the addition of some twenty odd, as there are more than that number on the waiting list, and at least half a dozen of these are said to be of considerable importance. The total floor space to be occupied will be something like 110,000 square feet. Owing to the inability of the management to comply with all the demands for space, for the first time in the history of automobile shows, the ban on subletting space has been removed, and it is thought that the 180 accessory exhibits catalogued on the official list will be augmented by some 50 or more whose names will not appear upon the latter.

Where the decorations are concerned, Manager Miles has always made the Chicago show distinctive by giving it an automobile atmosphere, so to speak, and this will be the case with the present show, which opens on November 30. The chief features of the ornamentation will consist of 112 oil paintings by Hardesty Maratta, all of them representing automobile scenes, the latter being distinguished by the fact that the car depicted by each painting will be of the make shown in the exhibit beneath it. The entire gallery front will also be covered with paintings of

automobile scenes made from photographs taken in a dozen different countries. In all there will be nearly 9,000 square feet of oil paintings, 20,000 feet of papier maché representations of automobile events, 150 of the Mercury automobile plaques which have become the distinctive shield of the Chicago show, 150 new figures adorning the pillars in front of the spaces, more than a mile of signs, more than 100,000 square feet of ornamental work in the ceilings of the buildings, 20,000 feet of paneled wall covering, 110,000 square feet of carpeting and three or four tons of miscellaneous staff ornaments.

The commercial vehicle section of the show, which will be housed in the Seventh Regiment Armory, formerly known as Tattersall's, has assumed quite unexpected proportions, some of the most recent additions being the E. R. Thomas Company's motor cabs, the wagons of the Pittsburg Motor Vehicle Company, and the Alden Sampson gas-electric road train, consisting of a 10,000-pound tractor and two 7,000-pound trailers. There is now a total of twenty-seven automobile exhibits in this section. Owing to the purely commercial aspect of this part of the show, admission will be largely by invitation, season tickets being presented to traction experts, buyers and other officers of companies interested in transportation problems. Invitations have been issued in liberal quantities to all the exhibitors to be given out in their own names to prospective customers, so that in addition to being the first representative showing of vehicles of this class, it is confidently anticipated that it will bring together the first large gathering of men interested in autos.

SAN FRANCISCO'S SHOW TO BE NOTABLE EVENT

SAN FRANCISCO, Nov. 1.—As a result of the success of last year's automobile show the Dealers' Association of California have determined upon a second exhibition. The Coliseum, which is one of the largest buildings in the United States, has again been chosen to house the display. The date has been fixed at the second week in December, and at a recent meeting of the Dealers' Association a committee composed of George Middleton, of the Middleton Motor Car Company; Herbert Choynski, of the General Motor Car Company, and J. A. Marsh, of the Mobile Carriage Company, were selected to handle the show. N. R. Cooper, who had charge of the show last year, has again been engaged to manage the affair this season. The Coliseum covers almost an entire block, and is situated directly opposite to the main entrance to Golden Gate Park. Directly to the south of the Coliseum, and only two or three blocks distant, is one of the steepest hills in San Francisco, which is also a city park. With this incline for demonstration of hill-climbing ability and the smooth roads of the park accessible for purposes of exhibiting the

other faculties of an automobile, it is not necessary for the San Francisco dealer to take long runs into the country to show every phase or every talking part of his car.

In addition to this the Coliseum is almost entirely on the ground floor, and has actually more ground floor space than has Madison Square Garden in New York. As snow is an unknown thing in San Francisco, the park will be green the year round, and the roads in Golden Gate Park are always in perfect condition. Last year San Francisco's show housed eighty-four different and distinct exhibits, and showed over one hundred and fifty different makes and models of automobiles. This year the exhibits will be even greater in number.

Decorations, out of courtesy to the Automobile Club of California, will be green and yellow, the official colors of this club, and will consist largely of green shrubs and palms, which will be secured from Golden Gate Park. As in last year's show, uniformity of exhibits, decorations and signs will be preserved throughout the entire pavilion, and simplicity will also be sought.

THE PROPOSED WESTCHESTER CHASSIS RACE.

The project of holding a stock chassis race next April in Westchester County has been receiving attention of late. An inspection of the proposed course of some forty-two miles in extent, and located about twenty-five miles from New York City, was made on Monday last by interested parties, including officials of Westchester County. The route, besides passing through two villages where controls would have to be established, runs through six townships, and the consents of all of the town boards would have to be obtained. According to the *New York Herald*: "Robert Lee Morrell, who is chairman of the general committee, is engaged in waking up the various committees in charge of the details of the race." T. F. Moore, the secretary of the committee, is optimistic concerning the Briarcliff Manor event.

ANNUAL SHOW DINNER OF WHITE COMPANY.

At the Waldorf-Astoria on Wednesday night of last week, the White Company gave its usual dinner to the White agents in attendance at the show, and also invited newspaper men from New York and other cities. Windsor T. White was the toastmaster of the evening, one of the incidents of which was the presentation of a gold watch and chain to Hal Sheridan, driver of the White runabout which won the Hower trophy in the A. A. A. tour.

The function was well arranged and neatly carried out. Walter White, who sailed on Saturday to look after White interests abroad, outlined the successful policy of the company from its beginning. George W. Bennet, manager of the New York City branch, issued the invitations in behalf of the company. The Hower trophy was prominently in evidence.



A SIMPLEX WITH BRIDGEPORT VEHICLE BODY AND WINDSHIELD.

BRIDGEPORT CO. TO MAKE RENAULT BODIES.

BRIDGEPORT, CONN., Nov. 11.—Interest attaches to the announcement that a contract has just been closed by President Harry D. Miller, of the Bridgeport Vehicle Company, of this city, with the Renault Frères Selling Agency, which handles Renault cars in the United States, whereby the Bridgeport Vehicle Company will henceforth make the bodies for the Renault chassis imported here. These bodies will be of the standard touring, limousine and landaulet types and will be fitted to all Renault cars which are sold complete by the makers.

Some samples of the Bridgeport Company's production were to be seen on the Simplex cars which were exhibited in the basement of the Garden show during the past week in New York City, one of the cars being shown by the accompanying photograph. Everything on this car above the frame is the work of the makers in question, and particular attention is called to the windshield. This is of plate glass in a mahogany frame and is supported by adjustable arms which slide on the permanent stays, being readily adjusted at any position by means of set screws.

SUCCESSFUL END OF ATWATER-KENT TEST.

Considerable interest attached to the breaking of the seal of the Atwater-Kent apparatus which has been run in conjunction with a Jones speedometer-odometer during the course of the two recent shows in order to demonstrate the high mileage obtainable from dry cells by its use. An Atwater-Kent timer taking current from six dry cells and connected to four spark plugs was sealed in a glass case together with the speedometer on October 25. The connection with the latter was equivalent to being placed on a car having 34-inch wheels and a gear ratio of 3 to 1, the average speed maintained being about twenty-five miles an hour. The case was officially sealed by Albert W. Jacobi, superintendent of the machine shop of the Automobile Club of America. The sparking gap was made 7-64 inch in order to give the equivalent of sparking under compression. At the conclusion of the test, the odometer reading was 4,249.3 miles, while the cells were still good for further service, as they showed an average of 6.5 amperes. No adjustments of any kind were found necessary on the timer.

HOW THE AUTO MET THE EMERGENCY.

LOS ANGELES, CAL., Nov. 9.—Bumping over mountain trails at an average speed of twenty miles an hour, and plowing through 100 miles of desert sand, Burt H. Paul, with three companions, reached Long Beach last night from Avawatz, a mining camp 270 miles away. The trip was made in thirteen hours, a record-breaking performance. The big 35-horsepower Mitchell behaved well and needed scarcely any attention during the entire journey.

Important business called the officers of the Avawatz Development Company to the mines in a hurry. Paul undertook to drive

them. It meant a dreary stage ride if they tried to reach the mines other than in an auto. The trio accepted. Frederick Heath, Joseph Pitts and Edward Martin made the journey with Paul. All would have been well had they not lost their way while chugging across the desert.

The party came to a place where two roads met, chose the wrong path, and soon found themselves in a trackless waste. Miles of sagebrush were passed, and they crashed through cactus, until they finally had to admit they were lost. Hours were spent running aimlessly over the desert sands. Toward night a lone rider pointed out the right path and Daggett was reached in time for supper. This costly experience made the autoists wary during the remainder of the journey, and they were satisfied to stay on the main road, eschewing all short cuts.

OLDS HAS NO MISGIVINGS FOR THE INDUSTRY.

"I have not the least misgiving as to what bearing the present financial disturbance shall have upon our business for 1908," says R. E. Olds, president of the Reo Motor Car Company.

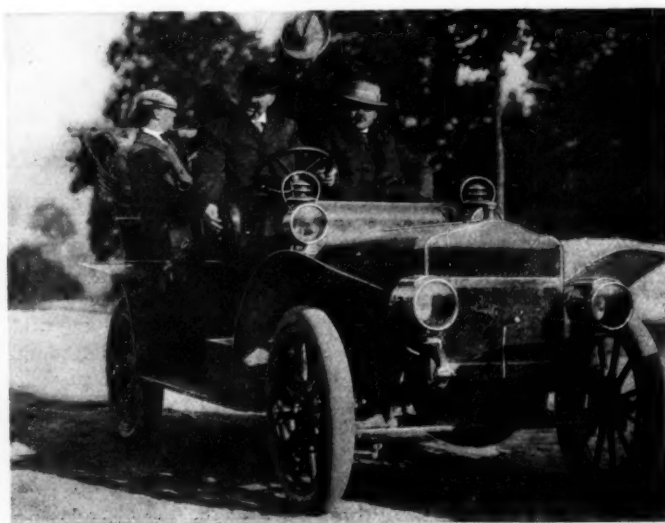
"The good sense of the American people and their matchless confidence in the nation, as a whole, have always won out in great crises, and I believe that they will readily solve the present difficulty which seems to be but temporary. The prosperous condition of every legitimate business throughout our land indicates another high water mark of prosperity during 1908."

KANSAS MAKING PLANS FOR AUTO TOLL ROADS.

TOPEKA, KAN., Nov. 11.—J. R. Drillinger, a resident of Garden City, Kan., is now busy with the organization of a company for the construction of special automobile roads in the western half of this State. The plans call for roads from Garden City east to Hutchinson, Great Bend, Wichita, or other important points, and west to the State line. The roads are to be exclusively for automobiles and toll will be charged according to distance run.

MAXWELL ON THE AUTO TRADE OUTLOOK.

"If the pessimists who predicted a falling off in the automobile business on account of the recent slump in the money market had visited our booth at the automobile show in the Grand Central Palace," said J. D. Maxwell, vice-president of the Maxwell-Briscoe Motor Company, "they would have found that their ideas on the subject are entirely wrong. This is proved by the fact that during show week our receipts at the Grand Central Palace, in the shape of deposits, averaged \$20,000 per day. Furthermore, the fact that we have increased our orders for raw material by fifty per cent. ought to have a tendency toward changing the opinions of pessimists regarding the automobile business."



J. D. MAXWELL AND BEN. BRISCOE IN THE LATEST MAXWELL CAR.

BRIEF ITEMS OF NEWS AND TRADE MISCELLANY

The Royal Motor Car Company, capitalized at \$100,000, with \$51,000 paid in, has been organized at Detroit, to manufacture motor driven vehicles. Paul Arthur as trustee, and Robert Webster are the principal stockholders.

The Seitz Automobile and Transmission Company, composed of capitalists from Monroe, Mich., who own patents covering a transmission for autos and other machinery, has decided to locate in Detroit. The company is capitalized at \$50,000, of which \$20,000 is paid in.

The spark coil and plug department of the Fischer Special Manufacturing Company, Cincinnati, O., having assumed such large proportions, it has been deemed advisable by this firm to separate it entirely from its other specialty business, and for this purpose the Fischer Ignition Company has been formed.

The Hartford Suspension Company has been elected to active membership in the New York Automobile Trade Association, the company having been an associate member for some time. The Mitchell Motor Car Company and the Carl H. Page & Company are also new members of the association, Mr. Page being added to the directorate.

R. M. Owen & Company have just been advised by James L. Farmer, secretary of the jury of awards of the Jamestown Exposition, that a gold medal was awarded Reo No. 33 for the 500-mile non-stop dash which it made from New York to Jamestown immediately after finishing the 1907 Glidden tour with a perfect score. Mr. Farmer further states that a replica in bronze of the medal will accompany the award diploma.

A petition in bankruptcy has just been filed against the Da-An-Nite Auto Supply Company of New York City by the following creditors: The B. F. Goodrich Company, \$2,898; Harburg Tire Company, \$1,703, and the Diamond Rubber Company, \$1,244, the petition being based on the fact that the company admitted its insolvency in writing on November 4 last, as well as its willingness to be adjudicated a bankrupt. Frank J. Wallace is president of the company, which was incorporated on December 3, 1906, with a capital of \$20,000.

The Chase Motor Truck Company, Syracuse, N. Y., has acquired a plant for the enlarging of its business. The plant was formerly occupied by the Sweet Steel Company, is located at 310-34 South West street, in that city, and covers 58,000 square feet. Besides the office building on West street, there is a four-story machine shop, a one-story erecting shop, and a one-story pleasure car department. The manufacture of the Chase two-cycle air-cooled commercial cars will be pushed with the enlarged facilities. The pleasure car department will continue the sale of the Ford line.

The White Company, Cleveland, O., makers of White steam cars, has issued a new route book, the fifth in the series issued by the company. The new book gives detailed road directions for over 1,500 miles of the main highways, suitable for tourists in New York State, and in the province of Quebec. The routes given include those in both directions between New York and Albany and in both directions between Al-

bany and Buffalo. In addition, directions are given for the route northward from Albany to Saratoga, and thence by way of Elizabethtown, Plattsburgh and Rouses Point to Montreal. From the latter city the route is given along the north bank of the St. Lawrence to Quebec. Still another route is that by way of Tuxedo and Central Valley to Newburgh. The new route book, like the four numbers which have preceded it, is profusely illustrated.

Individual instruction for owners and chauffeurs in operating automobiles on the crowded streets of New York is the latest improvement adopted by one of the schools for training chauffeurs and owners to operate and care for their cars. To carry on this work of giving every student a full training in operating a car in which he is alone with the instructor, this school, operated by the West Side Y. M. C. A. of New York, has been compelled to add the fifteenth car to its experimental and practical equipment. Under the plan at the Y. M. C. A. school, the student, with no one but his teacher, takes the car out, runs it through the streets and brings it back. Various types of cars are used at the different road lessons, and the practice is so planned that every student has had ample personal experience in handling wheel and throttle under all sorts of difficult driving conditions. The individual plan also gives the instructor full opportunity to test the pupil chauffeur on the rules and laws of the road. It is the rule of the school to "queer" cars in every possible way, and then to make the student diagnose the trouble and remedy it. Students also take cars to pieces and then rebuild them, and in this way put into actual practice in the work shops the information given at the theoretical lectures.

RECENT TRADE CHANGES.

I. C. Kirkham, Brooklyn and Long Isl. and distributor for the Maxwell, is preparing to remove from his present cramped quarters at Bedford avenue and Fulton street, to his new and commodious garage and salesrooms, on Bedford avenue, corner Clifton place.

NEW AGENCIES ESTABLISHED.

Charles E. Miller, the well known New York auto supply dealer, has opened a Brooklyn branch at 1932 Bedford avenue, corner of St. Mark's place.

The Times Square Automobile Company, of New York City, has opened a branch at 309-311 Michigan avenue, Chicago, which will be operated on the same principle as the New York house. Only first-class second-hand automobiles will be carried.

Joseph D. Rourk, for the past two years identified with the Cadillac sub-agency in Brooklyn, N. Y., has secured sole Long Island rights for the sale of Cadillacs, and will continue his headquarters at 1001-3 Bedford avenue. In the past the Brooklyn agency has been a branch of the New York distributors, but will be entirely independent in the future.

PERSONAL TRADE MENTION.

Louis Caswell, well known in the automobile trade, has been appointed sales manager of the Moon Motor Car Company, of St. Louis.

W. H. Dougherty, representative of the Fisk Rubber Company in the Central West, will in the future represent that company in his old territory, New York State.

F. B. Cole, for the past three years foreman of the repair shop of the H. H. Franklin Mfg. Co., Syracuse, N. Y., has accepted a position with the Boyer Motor Car Company, San Francisco.

W. V. H. MacEvoy, formerly sales manager of the C. G. V. Import Company, has joined the sales forces of Archer & Company, sole American concessionaire for the Hotchkiss car, and agent for New York City and surrounding territory, for the Pennsylvania.

Charles C. Craig, formerly sales manager of the Harrison Motor Company, Grand Rapids, Mich., has been appointed sales manager for the Model Automobile Company, Peru, Ind. Mr. Craig is well and favorably known in the trade, and his many friends will be pleased to learn of his new connection.

THE BANKRUPTCY LIST.

KANSAS CITY, Mo., Nov. 9.—The Kansas City Motor Car Company, makers of the Phoenix truck, filed to-day a petition in involuntary bankruptcy. It is signed by F. E. Wear, president, and principal creditor; the William C. Johnson & Sons Machinery Company, of St. Louis, and G. S. Blakeslee, of Kansas City. Liabilities are estimated at \$300,000 and assets at \$150,000. The cause of the petition is given as the present financial stringency, and a statement is made that the company will try to resume business.

BOSTON, Nov. 12.—Howard E. Whiting, automobile dealer of Cambridge, to-day filed a bankruptcy petition. Liabilities, \$11,563; assets, \$7,926.

NEW TRADE PUBLICATIONS.

Morris metallic packing is the subject of a small booklet from H. W. Johnson-Manville Company, William street, New York. In addition to the ordinary grades, the packing is made for such special conditions as steam turbines, air, hydraulic, gas and ammonia service.

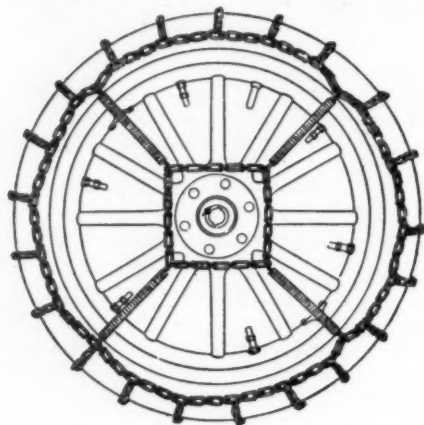
To present the Tinchler 1908 model to the motoring world its manufacturers, the Tinchler Motor Car Company, of South Bend, Ind., have issued an elegant illustrated catalogue. The new model is dealt with very briefly, but is shown to the best advantage by numerous and excellent half-toné illustrations.

Some information on the principles on which the Warner auto-meter works is contained in a booklet from the Warner Instrument Company, of Beloit, Wis. The Warner combined auto-meter and clock is also described and illustrated, and the intermediate gear by means of which two instruments can be fitted.

Having produced a superior type of buggy-about, which they have designated the autorunabout, the Schacht Manufacturing Company, of Cincinnati, O., has issued an elegant catalogue descriptive of their output. Those interested will be fully able to appreciate the qualities of the autorunabout by a perusal of the text and an examination of the many illustrations.

INFORMATION FOR AUTO USERS

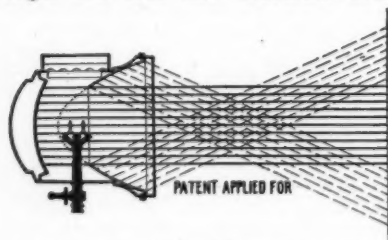
Weed Tire Chain Adjusters.—In order to do away with the clanking commonly heard from cars equipped with Weed chain grips, the makers, the Weed Chain Tire Grip Company, 28 Moore street, New York, have recently brought out an improvement in the shape of an automatic adjuster. This consists of four springs attached at equidistant points round the wheel to the chain



WEED ADJUSTER IN POSITION.

grips, and at the other end to four points on a piece of chain which thus assumes a square outline round the hub of the wheel, as shown by the accompanying illustration. This not only does away with the objectionable noise, but also serves as an automatic "take-up," without at the same time preventing the chain grip from creeping round the tire. Thus the adjuster keeps the chain grips sufficiently taut to prevent rattling or striking the mudguards, and also to take up for wear, but allows sufficient freedom for this progressive action, which is essential to the life of the tire.

Neverout Double Focus Searchlight.—Ever since acetylene headlights have been employed on automobiles, drivers have felt the necessity of having a light which would not only reveal obstructions sufficiently distant to make it possible to pull up in time when going at speed, but also to show the nature of the surface of the road immediately in front of the car. To meet this demand, the Rose Manufacturing Company, 925 Arch Street, Philadelphia, Pa., have brought out their new Neverout double-

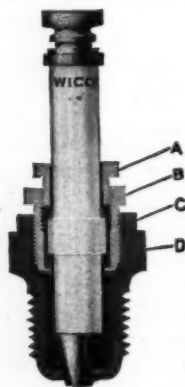


PRINCIPLE OF DOUBLE FOCUS LIGHT.

focus searchlight, the principle of which is illustrated by the accompanying cut. In addition to throwing a strong ray ahead and lighting the road-surface and side, these searchlights are made extremely powerful. They are used in connection with the patent Invertible Safety Gas Producer made by the same concern, and which embodies numerous features of merit exclusive in this device, on which, as its name indicates, the

manufacturers hold patents. It is made in either single or double cylinder types, the latter being recommended for use with the new double-focus headlight.

Wico Spark Plugs.—Under the title of "Wico," the Witherbee Igniter Company, 541 West Forty-third street, New York City, has just brought out a new type of spark plug for which much is claimed. This new plug is illustrated by the accompanying cut. B is the main carrier for the porcelain, A the packing gland, D the main shell into which the porcelain screws, and C the lock nut for the porcelain carrier B. One of its chief features of distinction is the fact that it is equipped with a micrometer adjustment, so that the gap can be set to .001 inch, to conform to the requirements of any compression, or to a magneto or battery system of ignition. This adjustment is accomplished by loosening the nut C and raising or lowering the



CROSS SECTION WICO SPARK PLUG.

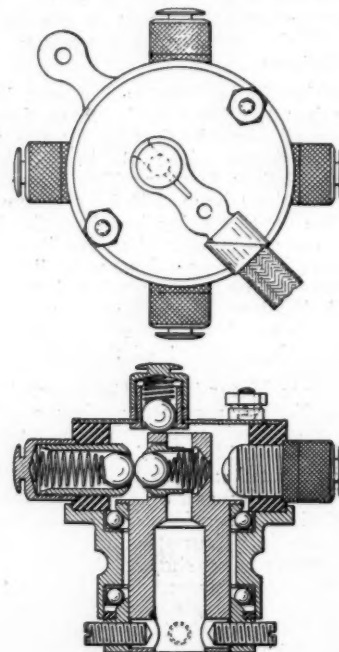
porcelain carrier B. By observing the location of the latter before starting, turning 1-6 of a revolution either way, gives a difference of .001 inch in the width of the sparking gap. When correctly adjusted, the nut C is again locked. By loosening C the porcelain may also be withdrawn for cleaning, making the operation a very simple one. The makers guarantee the porcelain not to break or crack under the most intense heat, while the ends of the electrodes are so formed that they act as a siphon cleaner, at the same time providing a large and efficient sparking surface.

Archer Gasoline Tanks.—After a long series of tests showing conclusively that its use prevents all loss by evaporation, as well as any trouble from water or dirt in the gasoline, the Archer Tank Company, 76 West street, Rutland, Vt., are placing their new system of gasoline storage on the market. The apparatus is of the simplest description, consisting only of valves and piping understood by every mechanic and plumber, all pumps and other complications being avoided. To draw off gasoline it is only necessary to open a valve and close it when through. The system acts on the well-known principle of water displacement, the gasoline being drawn from the top of the tank, while all water and sediment remain at the bottom and cannot possibly escape through the gasoline valve. The tank is carefully made of heavy boiler steel, riveted and caulked, and is buried in the ground for safety and con-

venience. The makers have tested their tanks thousands of times to convince skeptical customers, but the chamois has never shown a trace of water.

Travers Blowout Patches.—Legion hardly suffices to describe the number of devices evolved to enable the autoist to make good the unexpected rim cut or blow-out, all of which, however, seem to lack in some particular essential or other. According to the makers, the Travers Patent Blowout Patch Company, Broadway and Thirty-second street, New York City, this is not the case with their invention. It is built up of rubber and fabric, the same as a shoe, and has a brass flange on the side which locks to the rim and effectively prevents creeping. The patch fits inside the shoe and between the latter and the inner tube and keeps its position as long as the shoe lasts, no cement, straps, lacing or bolts being necessary to put it in place. While protecting the inner tube, it is also protected by the shoe.

Bemus Double Ball Contact Timer.—The T. Alton Bemus Company, 358 Atlantic avenue, Boston, Mass., have perfected their new ball-bearing timer to a point where they are willing to guarantee it to be good for 60,000 miles running, provided it is kept well lubricated and the points of contact, which are 3-8-inch steel balls that may be renewed anywhere at a nominal expense, replaced every 5,000 miles. The ball-bearing is of the simplest construction and is readily adjustable. The ball-races are made larger than usual and each contains 21 3-16-inch balls, thus insuring long life and a continued rigid bearing, an arrangement that makes it possible to guarantee accurate timing for a tremendous mileage. Felt and fiber washers are employed to ren-



SECTION VIEWS NEW BEMUS TIMER.

der the timer oil-tight, as well as dust-proof. The construction of the sockets carrying both the central and outside contacts has been altered, the center contact being brought nearer the axis and the outside contacts extended further in through the insulation, so that any specified number of degrees of contact may be obtained.